ENGINEERING NEWS-RECORD

JUNE 12, 1941

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maneuvering a monster...

Electrically

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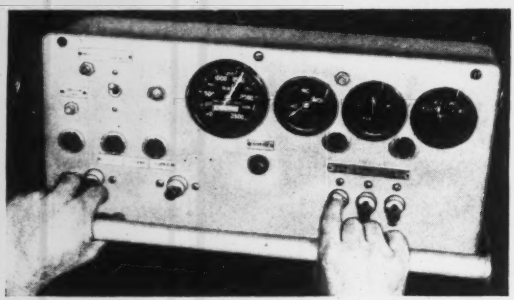
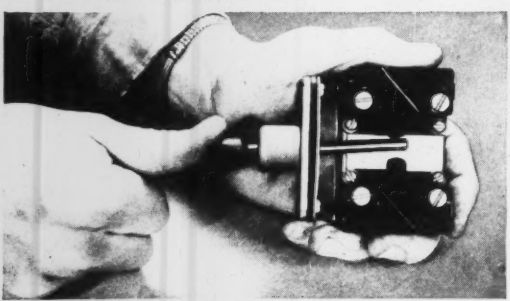


Control panel of LeTourneau's Model "C" Tournapull; a fingertip movement instantly applies power to motors which steer the vehicle, operate hoist, apron or tailgate.



Two General Electric switchettes make up switch assembly on control panel, above. Other G-E switches limit travel on steer, hoist, apron and tailgate motions by cutting power at the proper instant, eliminating stresses and strains.

The trend toward electrification of construction equipment has even invaded the mobile-tool market; witness the giant earth mover with electric power-steer and electrically operated hoist, apron and tailgate. Contractors using this new tool will move more yards per day at lower cost per yard because the electric drive offers fast, accurate, effortless control. This means instant response, quick reversal, increased operator comfort and efficiency. Gone are the multiple, clumsy manual controls and many mechanical linkages which slowed operations and increased maintenance costs.

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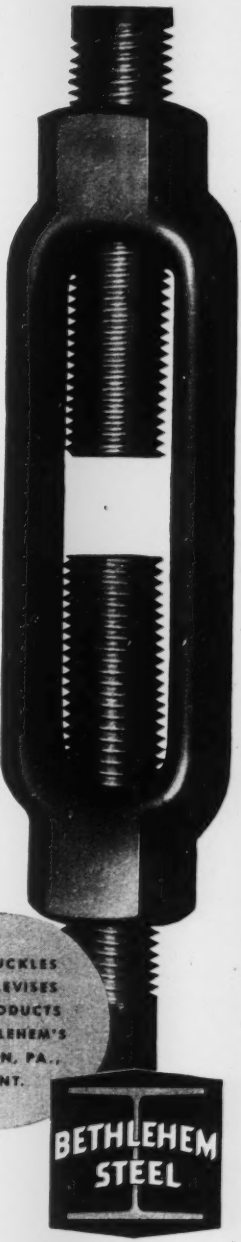

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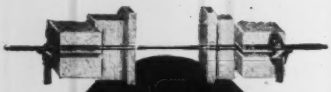

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ENGINEERING NEWS-RECORD

VOLUME 142 JUNE 16, 1949 NO. 24

WALDO G. BOWMAN
Editor

FEATURES IN THIS ISSUE

First Rails across the Tigris 18
Multiple Steel Hangars at Philadelphia's Airport 21
Cavitation Research Speeded by New Equipment 22

DEPARTMENTS

The Construction Week 5
Editorials 7
Developments Abroad 23
Municipal Affairs 27
Men and Jobs 30
Engineering Schools 36
Elections and Activities 38
Obituaries 39
New Products 42
Manufacturers' Publications 45
Construction Reports 49
Construction Business 80

THE COVER PICTURE

One-man predecessor of President Truman's now-famous "show how" program for helping the world to help itself, John L. Savage has just taken on two more overseas consulting jobs—this time on irrigation work in Turkey and Israel.

A sort of an unofficial roving engineering ambassador, Wisconsin-born (1879) "Jack" Savage has travelled to 19 foreign countries as a special consultant since he retired as chief designing engineer of the U. S. Bureau of Reclamation in 1945. His services have been sought on such projects as a $45,000,000 irrigation job in India's Punjab; a huge irrigation and power program for Afghanistan; water supply and power projects in Australia, and surveys of power possibilities on the Yangste River in central China.

Called the "billion dollar engineer" for his part in the design and construction of such works as Hoover and Grand Coulee dams, Mr. Savage has always deprecated the title—stressing rather the work of the subordinates who performed these jobs under his direction, but revealing himself at the same time as a first-class executive as well as engineer.

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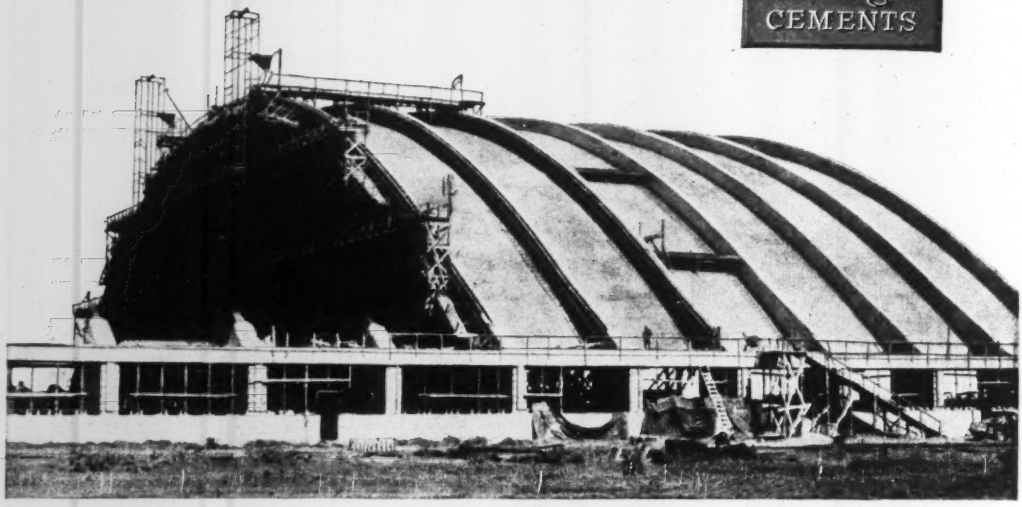

Big-bomber repair hangar at Army Air Base, Rapid City, S. D., nearing completion. Its 102,000 sq. ft. of floor space will accommodate six B-29's or two of the very heavy B-36's.

DESIGNERS AND ENGINEERS: Roberts & Schaefer Co., Chicago, Ill. CONTRACTORS: Built under supervision of the Corps of Engineers, Department of the Army, by the Steenberg Construction Co., St. Paul, Minn.

Interior of the Hershey Sports Arena showing the reinforced concrete roof, which provides a clear span of 232 ft. covering an area of 78,880 sq. ft. at street level.

DESIGNERS: Roberts & Schaefer Co., Chicago, Ill.

ENGINEERS & BUILDERS: Hershey Lumber Products, Hershey, Pa.

In 1936, completion of the big Sports Arena at Hershey, Pa., was front-page news. It had what was then the largest single-span concrete roof in America. Today, new mammoth structures are setting world size-records. One of the latest is the Air Force big-bomber repair hangar at Rapid City, S. D. Its great dome roof rises 90 feet above the floor with a clear span of 340 feet.

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THE CONSTRUCTION WEEK

WORK AND WIN—Congressional efforts to oust Reclamation Commissioner Michael Straus and Regional Director Richard Boke apparently are near defeat—for the simple reason that the two men have continued at their jobs, salary or no. Both men lost their salaries in the fiscal period Jan. 15-July 1, 1949, under terms of a rider on an appropriations bill that specified the employment of "qualified civil engineers"—but both men stayed at their posts. And last week the U. S. Comptroller General gave the Senate Appropriations Committee the ruling that: (1) the salary restriction is valid only until July 1, (2) Straus and Boke may be able to bring suit to recover their salaries for the period, and (3) both officials are legally authorized to continue work, despite the pay cut-off.

COST DROP—New York metropolitan area building costs have tumbled 10 to 15 percent since the September, 1948 peak, the New York Building Congress has heard. Prime credit is assigned to the stabilizing influence of the 30-month agreement between employers and building trades over wage rates; other credit goes to higher labor productivity; lower material prices; more even flow of materials, elimination of contingency items by subcontractors.

NO COMMERCIAL ATOMS—Production of the atom bomb is very definitely not work in interstate commerce, and thus the Fair Labor Standards Act doesn't apply, a Federal Court of Appeals said last week. The court tossed out a suit for $1,000,000 in overtime pay and damages claims, filed by 226 inspectors against the J. A. Jones Construction Co. The men had been employed on construction at Oak Ridge, Tenn. Said the court: "The use of the bomb . . . is the antithesis of the regulation of commerce . . . such use is intended to destroy, not regulate, commerce."

WATER-LOSS DETECTOR—Not one to claim credit for all new inventions, the U. S. Bureau of Reclamation is ready to try out a Russian device to detect water loss zones in earth dams. Engineers from the bureau's Denver office will proceed to Wickiup Reservoir, on the Upper Deschutes River in Oregon, in an attempt to detect water losses in the reservoir by measuring the direction and magnitude of an electric current caused by movement of water through a porous medium. Electrodes, connected with a sensitive potentiometer will be used: the motion of the water escaping in permeable areas is supposed to generate voltage that can be detected.

GRAVEL INVENTORY—Michigan contractors know where they can get good gravel this year—thanks to a 2,000-pit inventory completed by the state highway department's testing and research division. Available to all users, the data include pit location and ownership; laboratory results on abrasion tests; percentage content of non-durable materials.

OHIO TOLL TURNPIKES—With two execeptions—both rather remote—toll highway construction in Ohio became a certainty when Gov. Lausche signed a bill June 1, authorizing establishment of of a state turnpike commission. Two eventualities—neither given much chance by observers—could block the legislation: If enough signatures are obtained to force a referendum vote; or if the courts get a test case to determine constitutionality of the law.

FOREIGN AID WON'T STRIP METALS — A restudy of the impact of a European military assistance program somewhat larger than originally proposed has resulted in the conclusion that demands for steel, copper and aluminum could be met by the U. S. without any real hardship on the U. S. economy. The National Resources Board told Congress last week that military aid requirements would be small in relation to total availability of the metals, and are of "minor significance" in relation to the requirements of all proposed security programs—for the U. S. and elsewhere.

WAGE-TALK ASSIST—With bargaining over wages on a local level becoming more fashionable this year, new surveys by the Bureau of Labor Statistics promise to be a big help both to employer and union negotiators. BLS has compiled data on wages paid in medium-sized communities that will show wage rates paid particular workers in the specific community. Listed by industries in such localities as are dominated by one or more major sources of employment, the surveys will make it possible for employers and unions to base their talks on local conditions, rather than the previous broad national statistics. The first survey to be made available will be of Shreveport, La. Others in process cover Portland, Me.; Trenton, N. J.; Grand Rapids, Mich.; Spokane, Wash.

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Local Money For Local Roads

North Carolina voters last week provided the nation with an example of the proper way to handle the rural road-building problem. They gave approval for the state to borrow $200 million with a bond issue, the proceeds to improve the county roads. These roads are not eligible for federal aid, and the only way to improve them is with local money. North Carolina decided to spend the money.

Why is this perfectly logical decision emphasized here? Simply because its logic apparently has been lost on the representatives in Congress from other states who are pushing for an extension of federal aid to such local roads. We already have as big a federal aid system of primary and secondary roads as can be supervised efficiently from Washington. The federal aid mileage is already so vast that sufficient money is not forthcoming to develop it to adequate standards. And thirdly, rural road cost is not so much first cost as maintenance; federal money contributed for construction would largely be wasted unless followed up with continuous maintenance grants.

All these things, plus the fact that rural roads are purely for local use, militate against concentrating more road supervision in Washington. If states or counties want rural roads improved they should do it themselves. They know their own needs and they know the size of their pocketbooks. They and they alone are in a position to compare benefits and costs.

North Carolina may or may not have been wise to pledge itself to such a large sum for rural road improvement. It may find itself hard put to carry this debt while meeting its federal-aid matching requirements for the remainder of its road system. But that is North Carolina's worry. In any event, she did not choose to adopt the role of mendicant on a job that she recognized was her own responsibility.

Costs and Benefits Again

Interesting and expensive engineering and construction problems have developed from land subsidence in the Long Beach, Calif. area. That this subsidence resulted from pumping operations in the oil field underlying the region has long been the belief of many. In our opinion, the recent Navy report (see p. 11) confirms this view beyond a doubt. It was perhaps proper to examine other possible causes such as loads of heavy fill, tectonic movements and vibrations of various sorts, but the real source of trouble was too obvious to be questioned. One has only to recall that similar subsidence is in evidence on the shores of Lake Maracaibo in Venezuela to be convinced that oil production operations may be expected to cause settlement in certain types of ground.

Next comes the question in Long Beach of who shall pay for protecting structures—new and old—from damage. Many are apt to be alarmed by the prospect of spending millions on such works—particularly where expenditures would be from public funds. On the other hand, the value of the oil field is estimated at three-quarter billion dollars. As far as we can see, all agencies, public and private, who may be required to build protective works against the encroaching sea, benefit from or participate in the oil field revenue.

The cost of providing protection for oil installations from rising waters—as well as for docks, factories and other installations not required for oil production—may run into millions; but the operation that makes these works necessary brings in revenues of hundreds of millions. It is merely a matter of equating benefits to costs—an old story on many types of engineering works.

Restrict Force Account

In urging Congress to limit Bureau of Reclamation force account construction for fiscal 1950 to routine, minor and local emergency work, the Associated General Contractors is on sound ground. Construction by contract has proved over the years to be the most efficient and least costly method to use on public work.

Most public agencies, including the Bureau of Reclamation, agree to this evaluation of contract construction but, with some justification, want a free hand in determining when force account work may be justified. Yet with such freedom there is always a tendency to use it too prodigally. That this is true is indicated by the Bureau of Reclamation's activities during two years in which its force account work was not restricted. In 1945, the Bureau spent $7,000,000 (16.2 percent of all its construction money) on force account construction; in 1946, $12,800,000 (10.4 percent). A restriction like that now proposed by the AGC was in effect in 1948, and the total went down to $10,000,000, which was 5.4 percent of all work.

Clearly, unless force account work is limited by some sensible rules, it could develop beyond all reasonable bounds. And under a policy of expanding force account activities it is conceivable that the contracting fraternity could lose some of its necessary vitality. Construction contractors are an essential part of America's business economy and industrial structure. Ample opportunities should be afforded them to perform their services and increase their efficiency in the stiff competitive atmosphere of public works operations.

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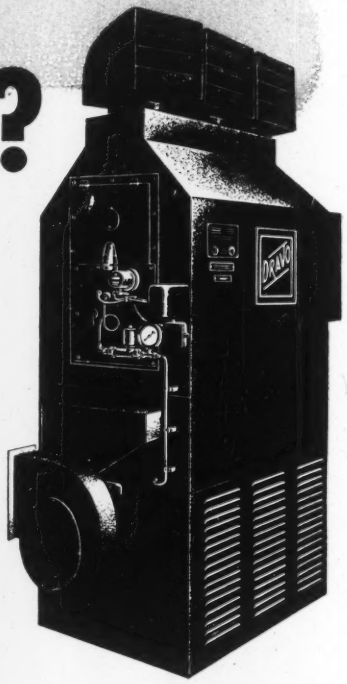

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JUNE 16, 1949 VOL. 142 NO. 24

Delivered pricing bill seen sure to get House approval

Senator O'Mahoney's permanent legislation to legalize individual use of delivered pricing gets Senate OK—Measure would not make basing point pricing legal

The outlook for permanent legislation legalizing individual use of delivered pricing has changed almost overnight.

Early this month, a one-year moratorium bill was ready to slide through both House and Senate. Then, as the Senate got ready to debate the moratorium, Senator O'Mahoney, longtime anti-monopolist, suddenly introduced permanent legislation to replace the moratorium bill. Within a day, the O'Mahoney bill passed the Senate. Last week a House judiciary subcommittee held a hearing on the O'Mahoney bill, and reported it out favorably, with some minor amendments.

If the bill as approved by the House subcommittee is approved by the House—as now seems likely—it would:

1. Legalize individual use of delivered pricing, but

2. Would not legalize basing point prices as used in the cement or steel industries, nor change the effect of the "implied conspiracy" decision of the rigid steel conduit case.

Bill well backed

The bill has powerful backing to get it through both houses—and approved by the President. Truman Democrats, Republicans, the Federal Trade Commission, and the anti-trust division of the Department of Justice—all are for the bill. The strong anti-monopolists in this group are for the bill because they say it does no more than clearly legalize delivered pricing per se, without otherwise changing the anti-trust laws as they have been interpreted by the courts. In other words, the courts' decisions in the important delivered pricing cases aren't changed.

Just what would be the status, then, of the various pricing methods involved in the delivered pricing ruckus, if O'Mahoney's proposal becomes law?

It will take some weeks before industry and government lawyers will have gone through the bill time and again with the finest-toothed legal comb—and it may take the courts another five to ten years to apply the new law to specific cases. But, as of today, here's how various pricing methods seem to measure up under the O'Mahoney bill:

1. Basing point pricing has not been legalized.

2. Freight equalization systems, in which every mill is a base mill, is certainly not cleared per se. FTC will continue to look at the competitive situation in any industry—and would apply its "planned common course of action" theory to win cases where it could not prove overt conspiracy.

This system—or any other delivered price system—can still be successfully attacked by FTC if it can prove that the companies use the system knowing that all their competitors are using the same system.

3. Individual use of a universal delivered price—"postage stamp pricing"—seems completely in the clear. The bill legalizes the chewing gum, candy bar, and cigarette kind of pricing, when done individually.

Universal delivered prices are probably legal, too, in the heavier industries—like cement and steel. But it's difficult to conceive of these industries switching over to such a system. For one thing, these industries are price-competitive—and the only way the universal delivered price could work would be for each company to have the same delivered price. And such a situation would bring FTC action for sure.

4. Individual zone systems, not adhered to by competitors, will be subject to the same anti-trust scrutiny they got before. That is, FTC will look for discrimination in the different delivered prices paid by competing customers who happen to be on opposite sides of a zone boundary. The O'Mahoney bill would remove the question of discrimination between competing customers in the same zone, because they would all be paying the same (delivered) price.

As the bill passed the Senate, it would have made new law. As the anti-trust laws stand now, "meeting competition in good faith" is generally a valid defense against a charge of price discrimination. But in a test case—against Standard Oil Co. of In-

(*Continued on p. 15*)

'Quake, now fire, slows progress on Tacoma bridge

Damage to the Tacoma Narrows Bridge by the recent Northwest earthquake was hardly repaired when on June 8 a fire broke out at the base of the west tower, destroying the timber fender and further delaying the cable spinning operation.

The tower itself suffered only one slightly buckled plate—damage estimated at $500—though flames, fed by oil and gasoline, reached scaffolding 450 ft. up from its base.

At least one week's delay is expected in construction of the $13,000,000 suspension bridge. Hoisting engines and derrick booms to be used on the 2,800-ft. main span were lost in the blaze. Damage was estimated at $300,000. Cause of the fire is thought to be either a short circuit or a discarded hot rivet.

RESURRECTED CABLE SADDLE is replaced on the east tower of Tacoma Narrows Bridge. The recent Northwest earthquake shook it loose and dropped it 509 ft. —through the deck of a work barge and into the water.

NEWS BRIEFS

Wabash Bridge—St. Francisville, Ill., has awarded the general contract for the construction of a 2,277-ft. steel and reinforced concrete bridge over the Wabash River between Illinois and Indiana to Smith & Johnson, Indianapolis, Ind., at $1,860,616. The consulting engineers for the project are T. D. Hunt and Donald Patterson, St. Louis, Mo.

Ohio River Crossing—A new bridge connecting Wheeling, W. Va., and Bridgeport, Ohio, is incorporated in Pennsylvania's long-range road program. Present plans call for only a bridge from Wheeling to Wheeling Island, to cost near $5,000,000. The last link would connect the island, in the middle of the Ohio River, with Bridgeport. Plans call for a tunnel through Wheeling Hill and relocation of U. S. Route 40 from the Fulton section of Wheeling to Bridgeport. The second phase of the plan, to link the island with the Ohio side, would include one bridge to Bellaire, Ohio, and another to Bridgeport.

Air Force Housing—The Air Force may go into the housing business at Chandler, Ariz., because of inadequate off-base facilities. Air Force officers have held preliminary discussions with representatives of near-by communities concerning construction of a 500-home project to cost about $3,000,000. Land would be provided by the Air Force which would guarantee builders possession long enough to make a profit on their investment.

High-Head Development—A new $7,000,000 hydro-electric project, envisaging a single unit producing 70,000 hp. by using three miles of penstock and a 2,000-ft. head of water—one of the highest high-head developments in the world—is planned by British Columbia Electric Co. in the Fraser Valley, 80 miles from Vancouver. Survey crews, assisted by a geologist and soil expert, are now gathering data in the area of Jones Lake which is about 9 mi. east of Rosedale, near Chilliwack.

A 1,700-ft. Breakwater—Morrison-Knudsen and the Macco Corp. have been awarded a contract for a 1,700-ft., $3,000,000 breakwater at Crescent City, Calif., by the Corps of Engineers. An estimated 585,000 tons of stone will be quarried near the site. Because of tidal conditions, only a 5½-month working period is possible each year. Completion is scheduled for 1951.

Cairo bridge rebuilding to take 3 years, $6 million

Illinois Central Railroad's bridge across the Ohio River at Cairo, Ill., is due for a $6,300,000 rejuvenation. Work will start this month and is expected to take three years.

New spans will be erected on existing piers, three of which will be repaired. Also, new piers will be constructed at mid-points of three existing spans so as to permit replacement of three 400-ft. through truss spans with six 200-ft. deck spans.

The bridge has been in service since October, 1889, and was strengthened in 1914 to meet requirements of increasingly heavier loads. The approaches were rebuilt in 1934.

A total of 3,883 ft. of bridge will be replaced, requiring 10,000 tons of steel. Full length of the bridge is 7,683 ft. When built, it was the longest all-steel river crossing in the world.

Another Veterans' Hospital—Gust K. Newberg, of Chicago, entered the low bid of six offered for construction of a 500-bed Veterans' Administration tuberculosis hospital at Madison, Wis. His bid was $7,111,000 for general construction.

Highway Planning Commission—Governor James H. Duff of Pennsylvania has signed a bill creating a highway planning commission to develop a long-range program for the commonwealth. Money for the $250,000 survey will come from the motor license fund.

New Monitoba Power Plant—The contract for a new water power plant for the Manitoba government at Pine Falls on the Winnipeg River has been awarded to the Foundation Company of Canada Ltd., at about $10,000,000, on a cost-plus-fixed-fee basis. The Bird Construction Co. of Winnipeg will be associated with the Foundation Company of Montreal, on the job. Construction of the plant for the Manitoba Power Commission follows a recommendation of T. H. Hogg, consulting engineer, who recently reported to the Manitoba government on the power situation in that province and advised that the new Pine Falls project should be carried out to avert a power shortage in 1951. The total cost of the development, including equipment, is estimated at $20,000,000.

McNary Dam bid opening announced for July 19

Opening of bids for the second major step in the construction of McNary Lock and Dam has been set for July 19, in the Walla Walla office of Col. William Whipple, Corps of Engineers district engineer.

In addition to diverting the 190,000 cfs. average flow of the Columbia River through the spillway section being built under the step-one contract, the job will include the initial Oregon shore cofferdam, concrete substructure for two main units of the powerhouse, a station service bay and assembly bay, the main second-step cofferdam and a portion of the Oregon shore abutment. It will probably be the toughest river diversion in U. S. construction history (ENR June 2, p. 5).

The invitation for bids lists 114 separate items for unit bids. The bidding includes seven sections.

Long Beach-Terminal Island subsidence due to fluid removal, Navy report says

Consultant estimates future subsidence, notes the dangers of horizontal movement and recommends soil repressuring studies

Subsidence in the Long Beach-Terminal Island area in California that has amounted to a maximum of 9 ft. since 1934 is due to removal of fluids (oil, gas and water) from the Wilmington oil field. This is the conclusion of a report recently made by Frederic R. Harris, Inc., New York consulting engineers, to Admiral J. J. Manning, chief of the Navy's Bureau of Yards & Docks.

The report noted that the subsidence had amounted to 4.5 ft. in 1945, and by the end of 1948 had reached a maximum of 9.0 ft. Rate of subsidence has generally been increasing, with as much as 0.15 ft. per month being noted. The vertical settlement has been accompanied by horizontal movements of the ground surface—more or less radially toward the center of subsidence—amounting to more than 3 ft.

Pumping in the Wilmington oil field began in 1937 and has been increasing steadily ever since. About 2,000 wells now pump at a total annual rate in excess of 50 million bbl. per year. Oil comes from various oil-bearing strata separated by impervious layers. Further complicating factors are several inactive fault zones that cross the field and separate the oil-bearing strata. The production zone varies from about 2,200 ft. to 6,500 ft. below ground surface where a basement schist is encountered.

Evidence is conclusive

Evidence from which the cause of subsidence was deduced is admittedly mostly indirect. However, it tends to substantiate the conclusion that the dominant cause is the fluid pressure decline in the oil zones accompanying the withdrawal of oil, water and gas. Efforts to obtain direct proof by measurement of the changes in thickness of the various substrata have as yet been inconclusive. The direct connection that exists between the rate of production of fluids from the oil zones and the rate of subsidence over short intervals of time has, according to the report, established the cause and effect relationship.

In making the study, the consultant considered all direct and indirect data available concerning the possible causes of subsidence. These possible causes are (1) removal of fluids incident to petroleum production, (2) pumping of water, (3) increased surface loads due to filling operations, (4) tectonic movements and (5) vibration of the sediments.

Included in the direct evidence considered was a study of radio-active bench-marks at various levels in the oil wells maintained by the Long Beach Harbor Department (ENR, Apr. 29, 1948, vol. p. 645). These bench-marks give an indication of amount of subsidence in the various strata. However, measuring methods are not sufficiently precise, and the bench-marks have not yet been in place long enough for definite conclusions to be reached.

The indirect data considered included a consideration of the time, area and amount of subsidence versus possible causes. All of these considerations pointed to the removal of fluids from the oil zones as the major subsidence cause.

Horizontal movement

It is noted in the report that horizontal movements threaten to become more serious to many structures in the area than the vertical settlement. Compressive strains of as much as 1.58 in. in 100 ft. have been measured and indications are that the strain will increase in rough proportion to the subsidence. Tensile strains at some distance from the center of subsidence are also expected to increase.

Total subsidence is expected to reach a minimum of 14 ft. by 1963. Most likely figures are 18 to 23 ft. at the center of the subsiding area. These estimates were based primarily on extrapolation of the observations made to date using various correction factors to take into account the lag of subsidence behind removal of fluids from the area.

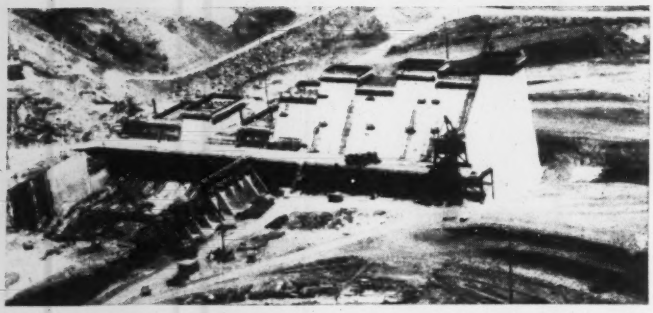
The Harris report suggests that studies be made on the possibility of water repressuring in the oil zones. Water repressuring it is believed will reduce the rate of subsidence and significantly increase the production of oil. Many legal problems are involved and at least 3 years would be required to make the necessary studies and get the water repressuring system under way.

The present economic value of recoverable gas and oil in the Wilmington field is estimated in the report to be $750 million. Extensions of the field by slope drilling under tidelands and possible future water repressuring may materially increase this value, the study group said.

Specific protective measures that the Navy could employ to safeguard its installations on Terminal Island are recommended. The Navy is requesting appropriations from Congress for this purpose using the report as substantiating data.

Meanwhile other agencies in the Terminal Island-Long Beach area are taking similar steps. For example, the Los Angeles Harbor Department recently raised a bascule bridge that spans Cerritos channel (ENR April 21, p. 18). The Ford Motor Co. has undertaken an extensive construction program to protect its assembly plant in the area. Other works are either underway or being considered.

CABLES LIFTED IN DREDGING OPERATION—Divers work with the Corps of Engineers in locating, lifting and replacing cables of the Pacific Power & Light Co. under the Willamette River in Portland, Ore. Cables are hung on pontoons while the river is dredged to a 35 ft. depth.



MAKING HEADWAY—Dorena Dam has come along so well and so fast, since this aerial photo of the concrete spillway was taken, that present estimates call for completion by next November.

To complete Dorena Dam 8 mos. ahead of schedule

With the aid of additional construction equipment and more workers, the Dorena Construction Co., contractor for construction of the Dorena Dam on Row River in western Oregon for the Corps of Engineers, expects to complete the job eight months ahead of schedule.

The contract calls for completion of the dam July 29, 1950. The new date set by the contractors for finishing the job is November of this year. Early completion will make possible storage of water to prevent flood damage in the Willamette Valley during 1949-50.

Construction work on the dam was started in April, 1947, and good progress was made in construction of the concrete overflow spillway. However, because of rigid control of moisture in the impervious fill, work on the fill is possible only during about 2½ months of dry summer weather. Operations in the 1948 construction season were hampered by wet weather. The additional equipment to be used will be concentrated on completing the fill this summer.

The schedule for this summer and early fall calls for the placing of 2,000,000 yds. of impervious fill in 77 working days.

The contracting company is sponsored by the Guy F. Atkinson Co. and includes A. Teichert & Son, Inc.; W. E. Kier Construction Co. and Bressi & Beveranda Contractors, Inc. Construction is under the direction of Gus Steiner, the contractor's project manager. Col. O. E. Walsh, recently made North Pacific division engineer, has supervision of the entire Willamette Basin program.

Because of the Pacific Northwest power shortage, work on the power production part of the Detroit Dam, also in the Willamette Basin, is being advanced. Detroit is primarily a flood control project, power secondary. However, existing conditions have prompted the engineers to plan for completion of the first of the dam's two 50,000-kva. generators by December, 1952, and the second by June, 1953. This new power production is to help relieve the shortage until McNary Dam starts operation.

The main contract for Detroit Dam is held by Consolidated Builders, Inc., a joint venture with Kaiser Engineers, Inc., leading contractor.

Union, contractors agree on vacation pay plan

Vacation with pay has been established for all workers under jurisdiction of Bricklayers Union No. 1 of Missouri. All members of the Bricklayers, Masons, and Plasterers International in the area are included in an agreement made with local contractors.

Contractors will pay eligible employees an additional three percent of their gross straight-time pay each week. This percentage will be paid in stamps from now until May 31, 1950. Stamps are then redeemable between June 1, 1950 and May 1, 1951, after which time they become void. A joint arbitration board will be responsible for a depository for vacation funds and the sale of stamps. This board will also determine stamp denominations and fix a vacation fund service charge to be paid by the contractors.

Employees will be provided with books in which to preserve stamps until such time as they take their vacations. Stamps redeemed totaling one day's pay will entitle the employee to one day's vacation.

Labor continues push for higher wage-scales

Despite the continued occasional appearance of a "status quo" agreement, the general trend of construction labor wages continued upward last week, as area after area reported new agreements granting wage boosts.

At a few points—Seattle, Wash., and Bergen County, N. J., for example—building tradesmen signed agreements calling for no general wage boosts for a year.

But the general pattern, both of agreements signed and demands made, was for more money. Examples were: Cleveland electricians received a 15 cent an hour raise; Burlington, Iowa, building unions got an across-the-board 10 cent an hour raise; bricklayers and plasterers at Albany, N. Y., saw their wages go up 25 cents an hour; wages in Cuyahoga, Lake and Geagua counties, Ohio went up 15 cents an hour for carpenters; bricklayers in Cook County (Chicago) Ill., got a 15 cent an hour raise; and in Dayton, Ohio, eight building trades crafts got an average raise of 12½ cents.

New strikes—all for more money—were reported at Washington, D. C. (carpenters); Trenton, N. J. (ironworkers); Watertown, N. Y. (carpenters) and Fargo, N. D. (laborers).

Two strikes ended, pending negotiation. At Billings, Mont., hod carriers ended a seven-day strike that had stopped all major construction, after agreeing to a 30-day negotiation period; and building trades workers at Toronto, Ont., went back to work pending action by the Ontario Labor Relations Board.

19-year-old apprentice wins bricklayer contest

The first national brickmasonry apprenticeship competition ever held was recently won by Charles G. Adams, 19-year-old apprentice from Little Rock, Ark. This competition was inaugurated by the Bricklayers, Masons and Plasterers International Union (AFL).

Altogether, 41 state and local champions competed in the finals held during the recent Union Industries Exposition sponsored by the AFL in Cleveland, Ohio. The unique nationwide contest was designed to show the public the opportunities offered by the union, and also to show the high caliber of union-trained men. Brick and tile manufacturers assisted in the national competition, represented by the Structural Clay Products Institute.

Need maps for Point 4, surveyors hear

Fundamental need and value of surveys and maps to open up areas for development of natural resources—both in the United States and abroad—got first attention of 450 professional and technical people in Washington last week. Two sessions on the first day of the American Congress on Surveying and Mapping's ninth annual meeting, June 8-10, brought out that basic fact.

In the morning meeting, Willard L. Thorp, planning coordinator for President Truman's famous Point 4 program—and Assistant Secretary of State for economic affairs—told his hearers that surveyors and cartographers must first map the underdeveloped regions of the world before the natural wealth of those areas can be tapped. He pointed to the widespread lack of adequate maps as an immediate obstacle to development of many countries.

American professional men, he said, will be needed in large numbers to help remedy this deficiency. He asked his listeners—as a first step—to begin thinking now of what they and their co-workers can do to speed the surveying and mapping of undeveloped regions.

U. S. maps needed too

Use of topographic maps in development of U. S. resources was the theme of the afternoon session. Reed A. Elliott, chief of project planning for TVA, set the stage by describing the production of topographic maps by both TVA and USGS as a basic and essential foundation for the accomplishments of the Tennessee Valley program.

A symposium on "needs, uses, and benefits of the national topographic map series" attracted great interest. Speakers brought out the value and benefits derived from the series in their various lines of work. They were unanimous in recommending its early completion.

Other subjects discussed by speakers during the three-day session included surveying instruments; reproduction and mapmaking processes; various phases of surveying as applied to public roads, lands, educational requirements, and allied activities; various types of special maps; electronic surveying; and the use of the helicopter in surveying and mapping.

One afternoon was devoted to meetings of the various technical divisions: property surveys under the chairmanship of S. A. Bauer of Cleveland; cartography, under W. C. Crump of the U. S. Hydographic Office; control surveys, under Capt. H. W. Hemple of the Coast & Geodetic Survey; and surveying instruments, under L. C. Higbee of the W. & L. E. Gurley Co., Troy, N. Y.

A publication, "Equitable Fees for Property Surveys," the result of two years' study by a special committee of the property surveys division was presented to the congress. This report recommends principles and form to be followed in preparation of fee schedules.

Officers elected to serve for this year are: President, S. A. Bauer, Cleveland, Ohio, succeeding Marshall S. Wright, Washington, D. C.; vice-president, Helmuth Bay, Washington, D. C.

Court says NLRB must hear jurisdiction fight

The National Labor Relations Board cannot stay out of the jurisdictional fight in New York between the International Brotherhood of Electrical Workers, Local 3, AFL, and the independent United Telephone Organization.

This decision, handed down by the U. S. District Court in Washington, is being appealed by NLRB.

The court ruled that NLRB cannot deny a union a hearing on a charge brought against another union in a jurisdictional dispute. NLRB, under the Taft-Hartley Law, has disposed of more than 100 of 117 jurisdictional charges without formal hearings.

The particular case involved a dispute which occurred during the construction of the new Idlewild Airport in New York. That job was completed under a compromise settlement suggested by Mayor O'Dwyer, but the issue still comes up on other building projects.

NLRB's regional director in New York, after investigating UTO's charge that IBEW was "muscling in" on its jurisdiction, dismissed it as being without merit. He was upheld by General Counsel Robert N. Denham's office. The independent union appealed to the court, which last week directed NLRB at least to give the union a hearing.

The jurisdictional issue is over the pulling of telephone wires through a conduit. At Idlewild, IBEW had jurisdiction for bringing the wires from the pole to the airfield. UTO took charge of the wires inside the buildings. The dispute was over which union should pull the wires through 400 feet of conduit.

TEXAS-NEW YORK PIPELINE is under way. Ground was broken late last month on the 1,840-mi. gas line. The machine shown here cleans and coats 30-in. pipe before it is laid. (Acme Photo)

Toll highway programs pushed by states

The Massachusetts Public Works Department is urging the construction of a 90-mile toll highway through the state between Connecticut and New Hampshire. A commission study is planned to determine whether the project would be self-liquidating on the basis of traffic volume, and whether to proceed with the sale of revenue bond financing outside the state's credit to carry on the construction.

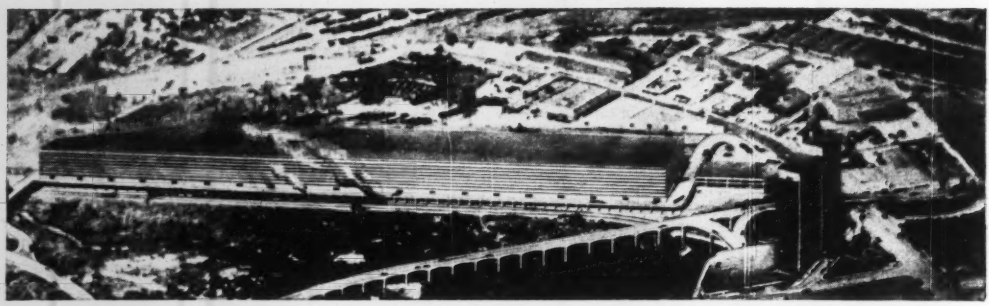
This preliminary study is expected to cost $250,000. The expressway would join with Connecticut's Wilbur Cross Parkway at the town of Holland at the Connecticut line, and at the New Hampshire end where U. S. Route 1 crosses the line at Salisbury.

Toll connections to the Boston area were not considered as a part of the project because of existing competition of east-west highways.

Apparently spurred by the success of toll highways in Pennsylvania, Connecticut and New York (the Westchester Parkways), other toll-road proposals were advanced during the week.

A bill to permit construction of a $5,000,000 toll road in Colorado, between Denver and Boulder, has been passed by the Colorado legislature. It authorizes the state highway department to guarantee payment of 30 percent of the securities that would be issued to finance the project.

In Ohio, Governor Lausche signed into law a measure creating a turnpike commission authorized to build toll highways (see p. 5 this issue), and Governor Turner of Oklahoma has signed a law extending the life of the Turnpike Authority by two years.



Big industrial buildings to be erected at Houston

A multi-million dollar industrial building development is planned for Houston, Tex. It will occupy the 23-acre site of the Missouri-Kansas-Texas (Katy) Railroad's present terminal facilities.

Raymond J. Morfa, chairman of the board of the Katy Lines, has announced an agreement for the sale of Katy's downtown freight and passenger terminal properties to the Katy Park Industrial Development Corp., which is planning to invest $50,000,000 in a 10-story warehouse and a 25-story office building.

The warehouse will be nearly 2,000 ft. long and 200 ft. wide with a usable floor area of more than 3,000,000 sq. ft.

Plans call for a novel layout of streets and arterial highway entrances and by-passes. Entire trains will be spotted along the side of the industrial building for quick unloading. Complete truck loading dock facilities and main entrances to the building will be provided at the third floor level on the south side, and on the north side there will be similar facilities for loading and unloading on the ground floor level.

The Katy Park Corp. is not affiliated with the railroad but is a subsidiary of the National Industries Corp. of Dallas. President J. B. Salmon, Jr., says that several insurance companies will participate in the permanent financing of the project.

Architects and engineers for the project are the firm of Wyatt C. Hedrick, designers of the big Shamrock Hotel, opened in Houston on March 17. The general building contract has been awarded to the O'Rourke Construction Co. of Houston and Dallas.

PERSPECTIVE . . .

New strategy for steel industry

Washington planners have asked the steel industry to begin stockpiling high grade iron ore "in the ground." This would be done by reducing present consumption of the Great Lakes ore and making up the difference by importing from abroad.

And, to augment the usefulness of the Mesabi Range, the planners asked that the industry decide on beneficiation of magnetic taconite (low grade) ores, decide if it wants money help from the government, and then go ahead and build the treatment plants.

The facts, as pointed out by a government spokesman, are that at present rate of use the huge Minnesota deposits of high grade ore virtually will be wiped out in ten years. The government's plan isn't a cure-all, but it does put off for a while the inevitable. What the government is worrying about is the fact that a war ten years, or five years, from now would catch the country unprepared to supply enough iron ore from its own neighborhood to keep the steel mills at an emergency rate of production. Planners discount the availability of foreign ores in a war—the Snorkel sub is that real a threat.

It would take at least five years, under peacetime incentives, to get the import program really rolling. By that time it could count on: 25 million tons of ore from about nine foreign sources; another 5 million tons from magnetic concentration of Mesabi taconite—if the two tentatively planned beneficiation plants were started immediately.

Beneficiation, once started, could be a part-way substitute for the shipping ore business in the Minnesota ranges. There are at least 1.7 billion tons of the magnetic taconite available for open pit mining. The big problem on beneficiation is the huge initial cost. At present, experts think construction costs will run around $15 per capacity ton.

What the steel industry will do about the government's proposal will depend on what U. S. Steel, M. A. Hanna and Bethlehem decide. The steel corporations (and Hanna) control from 65 to 80 percent of the quality ore in the Mesabi.

Bids are submitted for Chain of Rocks work

The McWilliams Dredging Co. of New Orleans, La., has submitted the low bid for excavation of a canal and construction of the adjacent levees for the Mississippi River Chain of Rocks canal project near Granite City, Ill.

Six bids were submitted for the project, and $7,369,753 was low.

The canal, to be about eight miles long, is to extend from about one mile below the mouth of the Missouri River to a point approximately one-fourth of a mile north of the Merchants Bridge. It is designed to bypass the treacherous Chain of Rocks reach which has been a serious hazard to river transportation for more than 100 years. The project will involve about 23,300,000 cu. yd. of earth excavation and the material will be used to construct about 14½ miles of levee.

This is the second big project to be awarded by the district engineer's office in the plans for the improvement of the Chain of Rocks stretch. Previously the River Construction Co., New York City, was awarded a $16,620,000 contract for the construction of Lock No. 27 near Granite City. Construction of that project is proceeding satisfactorily. River Construction Co. was formed by several of the country's largest construction firms.

Demand drops for C.E.'s; pay is lowest

Fewer engineering graduates are needed this year than last. The Engineers Joint Council's general survey committee has recently uncovered this fact with a questionnaire on demand-salary data for graduating engineers. This study complements and substantiates a recent survey on the supply of young engineers, conducted by ENGINEERING NEWS-RECORD (ENR Nov. 18, 1948, p. 5).

Returns, coming from 162 industrial concerns and 31 governmental agencies, express the situation as of last March 15. EJC says it has not changed appreciably since then.

Employers of 90,000 engineers (of an estimated 265,000 such graduates employed throughout the country) report that they will hire 21 percent fewer graduates this year than in 1948 —8,175 as opposed to 10,400. Industrial companies will show a 26 percent cut; government, in general, will cut down 9 percent.

According to the survey, 25 percent of the engineers—class of '49—will have a starting salary of $275 monthly or more; 50 percent will make at least $255, and 75 percent at least $250. The median is $255 per month. Median rates to be paid graduating masters and doctors with no practical experience are to be $300 and $375 per month respectively.

Civil and electrical engineers will be in the greatest demand, and these two groups will be paid the least to start. There are 1,950 civils and 1,960 electricals needed by the employers surveyed, and these new workers will receive a median $250 monthly.

Brightest light in the dark demand picture comes from the state governments; they will hire 1,075 engineers (1,038 civils) this year—an increase of over 40 percent above 1948. In industry, transportation and automotive concerns show the greatest increased need over last year. Consulting engineers report one of the greatest hiring cuts—46 percent below last year.

Chemical and ceramic engineers will fare the best, earning $290 per month with bachelor's degrees. Civil engineering graduates, starting at $250, can expect to be making $270 after one year.

Civil engineers with bachelor's degrees and 10 years' experience now make a median $400 monthly. Median of the upper half is $450; of the lower half, $385. All other branches of engineering reporting boast medians higher than these; the mechanical-aeronautical-industrial group, now 10 years out of school, is making $500 per month.

Few significant geographical pay-rate differentials were noted. In some cases an increase of from $15 to $35 per month was reported for assignments to the West Coast where a median rate of $300 prevails but the total reported demand is only 250 graduates.

House OK seen likely on delivered pricing law

(*Continued from p. 9*)

diana—a Federal Circuit Court decided that the "good faith" defense is not sufficient if there is "substantial injury to competition." The case is now before the Supreme Court. The Senate bill would have written this interpretation into law. But the House subcommittee has taken this out of the Senate bill—and Senator O'Mahoney in testifying before the House committee indicated that he would go along with the change.

The bill as passed will not change in any respect the present situation on court review of FTC's decisions. Under the Administrative Procedures Act, the decisions of FTC—and other regulatory agencies—are upheld by the courts if their decision is based on "substantial and probative evidence." O'Mahoney's bill reiterates this.

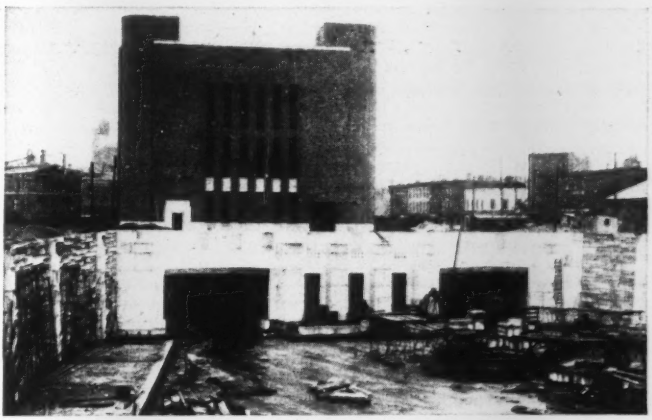
One thing seems certain: Cement and steel companies, once the law is passed, will go back to some form of delivered pricing—but not the basing point system banned by the Supreme Court in the Cement Institute case. Industry lawyers know that it will take at least two or three years —and probably more—to get test cases through the Supreme Court. In the meantime, the companies will be doing business on a pricing basis more preferable to them than the f.o.b. mill system now widely used.

A basic consideration in the sudden appearance and passage of the O'Mahoney bill is this: If the moratorium bill had been passed, Congress would have to go through the whole basing point-delivered pricing rigmarole again. And, Congressmen are very anxious to put the whole thing behind them.

Gt. Northern pushes work on Cascade rail tunnel

Great Northern Railway crews have begun the pressure-welding of four miles of continuous rail for the railroad's 7.79-mi. Cascade Mountains tunnel in Washington state.

Nearly 810 tons of new rail weighing 115 lb. to the yard will replace 110-lb. rail now in use. A pressure-welding machine welds the rails into sections a quarter-mile long which are moved into the tunnel, eight at a time, on roller-equipped flatcars coupled together. Joints between the quarter-mile sections are hand welded in the tunnel.



BROOKLYN-BATTERY TUNNEL ENTRANCE, at the Brooklyn end, is the site of one of the four ventilating stations. In all, 53 fans of 8-ft. dia. will be used to move 25,000 tons of air per hour through the tubes. It is estimated that in an emergency all air in the tunnel could be replaced in about one minute. In periods of average traffic, it is said, the tunnel air will be no more contaminated than that at any busy New York City intersection. (Wide World Photo)

RANDOM LINES . . .

. . . in which is told how proper planning made a two-day field trip far better than routine

Something strenuous in the way of inspection trips recently was run off without a hitch by the junior members of ASCE's Metropolitan Section. Some 150 engineers and guests were moved nearly 400 miles in two days.

Traveling in a police-escorted, 35-car convoy, the group visited construction sites of three earthfill dams, a five-mile diversion tunnel, a New York City-owned sewage treatment works, all 85 miles or more upstate, and a 33-year-old masonry dam—first ever to be built with expansion joints.

New York City's Board of Water Supply was host, and representatives of seven major professional societies went along—Dutch treat.

From start to finish the trip was "engineered" with the precision of a complex troop movement. But, troop movements never have been—in the opinion of those who took this trip—completed at its 45-mph. pace nor with such complete absence of confusion.

For most participants the trip began at the New York end of the George Washington Bridge, where all assembled. However, as the convoy got under way, it became apparent to all that for some the actual start of the trip had been many weeks earlier when plans, estimates, and details had been worked out.

At the assembly point, cars were tagged front and rear with numbers signifying their positions in the line of march. A seating list helped the carless find their traveling accommodations. Route maps were passed out; programs of the two-day's activities and name tags were distributed.

A time-table of events which had had the check and recheck of exacting test runs dictated departures and arrivals that were very closely followed throughout.

Escorted across the George Washington Bridge by a New York City motorcycle policeman, the convoy was picked up on the New Jersey side by State troopers. Town officials along the route—warned of the coming motorcade—waved it through intersections, and sirens wailed as city police threaded the long line of cars through traffic of Middletown and Monticello.

At Liberty, N. Y., a planned refreshment stop taxed the local plumbing but repaired the riders for the remainder of the trip to Downsville Dam. And at Downsville—110 crow-flight miles from New York City—the group viewed construction progress on the remotest structure in the Delaware Water System—farthest from completion of the Board of Water Supply's "trio of earthfill dams" (ENR Jan. 6, p. 60) at present under construction.

Crossing a half-mile-wide valley, this 200-ft. rolled earth structure will form a reservoir 18.8 miles long on the East Branch of the Delaware River. A delivery tunnel to be advertised for bids later this month will carry water under the divide to Rondout Reservoir —25 miles away in the Hudson River Basin.

Visitors saw at Downsville a 15-percent completed job. The cutoff wall is under construction, and the diversion tunnel is being lined in a joint operation by Walsh Construction Co. and B. Perini and Sons Inc. Arrangements had been made for the group to eat a hearty mid-day meal in the contractors' mess on the jobsite.

From Downsville the route led to Grahamsville where the convoy pulled up, to be greeted by coffee and doughnuts which brought to the minds of many the troop movements of not long past. Grahamsville is at the outlet end of a five-mile tunnel which will deliver water from Neversink to Rondout Reservoir. Here the contractor, Frazier-Davis Construction Co., of St. Louis, has devised a jumbo with four completely maneuverable drills, with which he is advancing the 10-ft.-dia. bore. Here, too, the Board of Water Supply must build a 100,000 gd. sewage treatment works to abate present pollution of the water supply by a town of 400 persons.

BWS police led the way from site to site. At each stop, pre-selected groups followed guides for detailed explanations of work in progress, after first hearing a general description given over a WNYC sound truck's amplifier. Display boards posting drawings of the work were built specially for the quick orientation briefings.

On the road early Sunday, the convoy inspected Neversink Dam, where the diversion and cutoff structures are finished and earth fill is now 15 percent complete. Here the dust which had been thick under foot at Downsville the day before was settled by an obliging contractor (S. A. Healy Co.) and his water tank truck.

The fast-paced motorcade traveled a BWS-built highway from Neversink to Merriman Dam. This dam is virtually complete, and the state highway had to be relocated above the future shoreline of Rondout Reservoir.

Descend into Kensico Dam

Ferrying across the Hudson, the convoy followed the Taconic State Parkway—and considerable Sunday traffic—down to Kensico Dam within 15 miles of New York City.

To climax the trip's activities, the group descended into the inspection chambers of the massive gravity type dam—150 ft. under the water's surface.

The entire trip was planned with the approval of BWS Commissioner Irving V. A. Huie. Victor C. Brownson, deputy chief engineer of the board's engineering bureau, supervised all arrangements. Joseph D. Lewin, engineer for BWS and advisor of the ASCE Junior Branch acted in a liaison capacity in arranging the trip and was master of ceremonies, convoy commander, and chief guide throughout the junket. AJF

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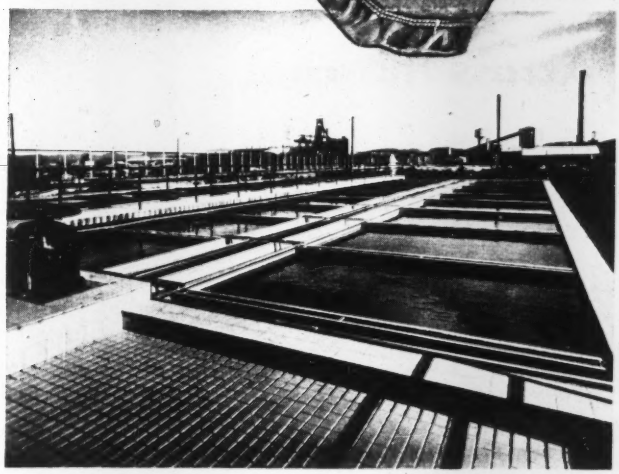

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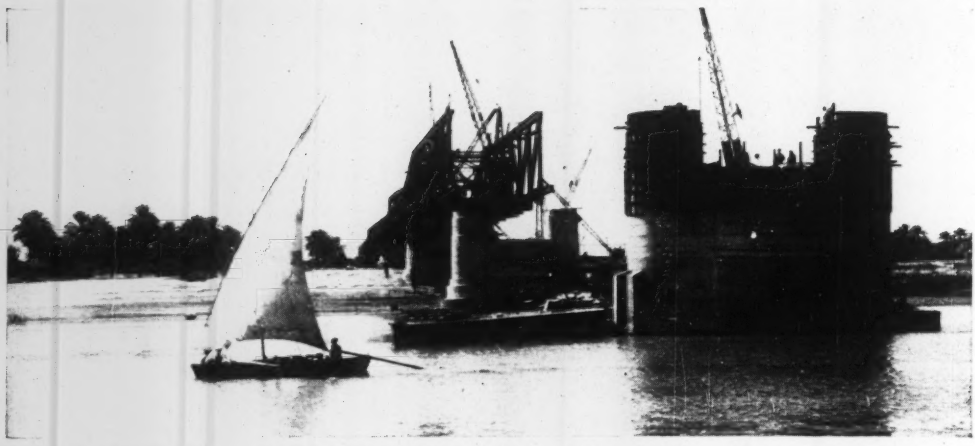


BAGHDAD BRIDGE will carry rail, highway and foot traffic across the Tigris, replacing an ancient ferry service.

First Rails Across the Tigris

L. G. Robinson
Assistant, Halloway Bros. Ltd.,
London, England

MODERN BAGHDAD, lying athwart the Tigris River, finally is getting a railroad bridge that will eliminate a bottleneck in Iraqi commerce.

For the time being this structure will carry the meter-gage track of Iraq's south-north Basra-Kirkuk line, which until now has had to ferry its cars across the river. However, provision is made for widening the gage to standard, whereupon the famous Berlin-Baghdad railroad from Istanbul and points west may have an eastward extension. The bridge also carries an 18-ft. roadway and a 10-ft. walkway.

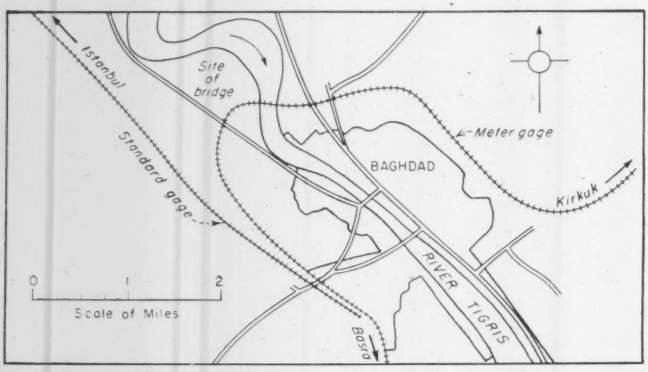
Modern in all respects, the design and construction of this 1500-ft. bridge (ENR May 20, 1948, p. 5) and its extensive approach system embody modifications based on ancient conditions. The job provided an opportunity to observe the adaptation of Middle-East labor to occidental construction techniques.

At the approach site it was found that the ground contained the remains of an old Baghdad—probably that of Haroun-al-Rashid of the Thousand-and-One-Nights—in the form of a stratum of brickbats between 6 and 20 ft. below ground level. The ancient bricks had been set in gypsum mortar, with the result that the groundwater has a sulphate content that would weaken concrete.

Thus, cast-in-place piles were out of the question for approach structures. It was decided to carry the approaches (two 450-ft. highway viaducts, and two railroad trestles, each more than a half-mile long) on continuous reinforced-concrete rafts above the water table. Tests showed that the alluvial soil of the area would support 0.7 tons per sq. ft., and the rafts were designed to this figure.

Slight settlement, even during construction, could not be accepted, so as an additional precaution, 14x14-in. precast reinforced concrete piles were driven under the raft.

Close control was kept on the concrete of both raft and piles. A rich mix with a cement low in tricalcium aluminate was used, and due care was taken to obtain a dense, impermeable concrete. The piles finally were waterproofed by dipping them in a bath of 6 percent sodium silicate.



UPSTREAM FROM THE CITY, the new bridge will replace a railroad car ferry that had linked meter-gage rail lines between Iraq's agricultural and mineral areas, in the north, and the seaport of Basra, in the south.

The main bridge

The main river crossing is a steel-truss through bridge running east and west. There are six river piers. Three anchor spans each rest over two piers and extend both ways 75 ft. beyond them. Supported on these cantilevered ends are four small suspended spans, the shore ends of the outside ones rest-

ing on abutments. The total length of the bridge between abutments is 1,508 feet.

On pier work, foundations were carried well down to firm granular strata, to obtain bearing capacity and to avoid scouring. Piers and abutments were placed with the aid of pneumatic caissons, all but one of which in plan were 56 ft. 6 in. long and 19 ft. wide, with semi-circular ends. The odd caisson, on the east bank, had an additional overturning moment to withstand, due to a high earth bank on one side and a steeply shelving river bed on the other. So this caisson was designed rectangular in plan, 62 ft. 6 in. by 25 ft., and the pier on top of it was slightly offset to counteract the moment.

Caissons were sunk to a minimum of 45 ft. below the river bed, the deepest being 75 ft. below low water. Maximum air pressure was 38 lb. per sq. in.

Caisson-sinking operations—excavating, adding 2 ft. skin-plate lifts and pouring concrete for sinking—each took about one 8-hr. shift, resulting in 2 ft. of progress in 24 hours.

Piers built on the caisson foundations were poured in steel forms. Inside the three piers in deepest water, three steel-lined chambers, with inlets, were left for pumps that will supply water to nearby areas. Discharge lines will be carried on the bridge.

It has been mentioned that the railroad approach trestles run more than a half-mile each way from the bridge. They carry the line on over highways that in each case are a half mile from the river. On level ground, the bents vary from 22 ft. in height at the main bridge to 16 ft. at the roads. Every seventh span is braced longitudinally between bents.

Labor experience

At this stage in the country's development, Western supervision is essential in heavy public works. The contractors, with some years of civil engineering continuity in the country, have a few loyal Iraqi craftsmen, but the majority of local labor has to be trained. When trained, it cannot always be relied on to repay the trouble either by conscientious workmanship or fidelity. Kurds, from the mountainous country in the north, do the heavy work and the work in compressed air. (These men seem to delight in evading the compression discipline, a fact that caused several cases of bends.) They are remarkably strong and it is quite a common sight to see a string of them comfortably unloading cement all day, each carrying 300-lb. bags. Jobs requiring manual skill and technical ability seem best filled by Armenians and Assyrians.

The Baghdad Arabs—a heterogeneous race, including Caucasian, Semitic and Negroid types—provide the general labor.

Iraqi labor is not psychologically adjusted for unionization. Nevertheless the workman gets a fair enough deal, partly due to a set of sound labor laws, and partly to his own efforts. Objective enough to know his own value to a farthing, shrewd enough to demand, and get, several times that value, and independent and dignified enough to refuse less, he naturally regards anything resembling a trade union as a redundant official method of taking his money away from him. Relations between employer and workmen on the bridge have been equable. There was one short strike in the Spring of 1948, but this was externally inspired.

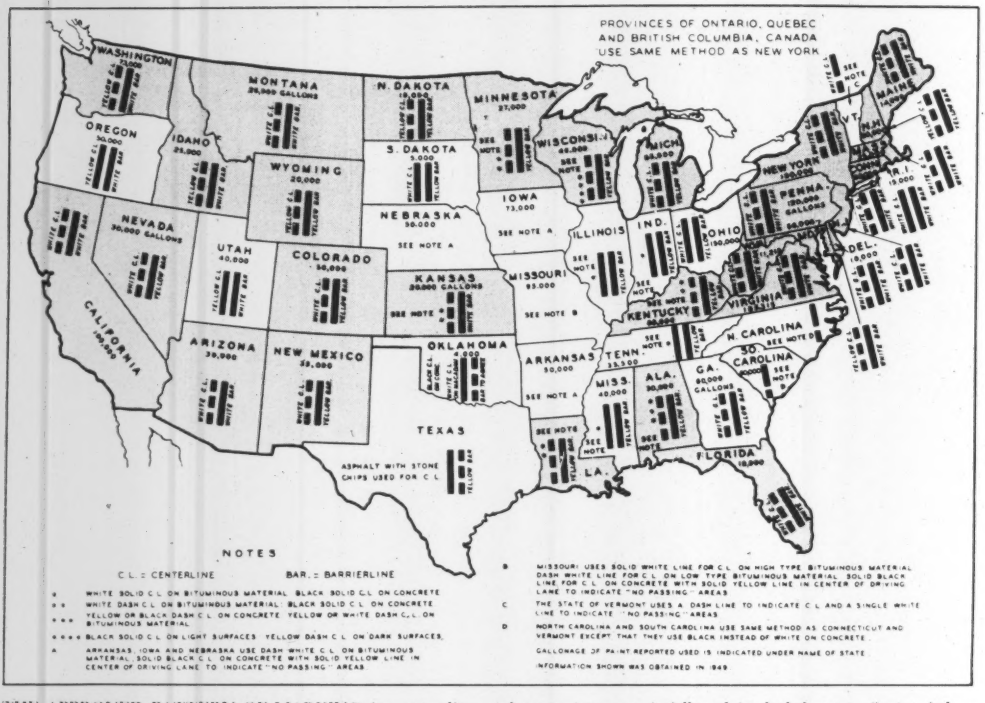
The bridge is being built under a $4,000,000 lump sum contract. It is only part of an ambitious and far-sighted scheme of developments which includes other railway work, large irrigation schemes, town planning improvements, and extension of highways.

Management and supervision

The owner is Iraqi State Railways, A. D. M. Brown, chief engineer. H. Mattick is resident engineer for the Messrs. Coode, Vaughan-Lee, Frank and Gwyther, London, consulting engineers; A. E. Reid is general manager, Middle East, for the Halloway Bros. (London) Ltd., contractor on the job.

DIPPING THE PILES in a sodium silicate bath, to protect them from sulphate in the sub-surface strata where remains of Harqun-al-Rashid's kingdom still exist. (Photographs by Kathleen Robinson).

OVER THE RUBBLE of an ancient Baghdad. This railroad viaduct was erected on a reinforced concrete mat (top at grade) and further supported by precast piles that penetrated the old city's buried ruins.


PROVINCES OF ONTARIO, QUEBEC AND BRITISH COLUMBIA, CANADA USE SAME METHOD AS NEW YORK
WASHINGTON
OREGON
IDAHO
MONTANA
WYOMING
NEVADA
UTAH
COLORADO
ARIZONA
NEW MEXICO
N. DAKOTA
S. DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LA.
WISCONSIN
ILLINOIS
MICH.
IND.
OHIO
KENTUCKY
TENN.
MISS.
ALA.
GA.
FLORIDA
S. CAROLINA
N. CAROLINA
VIRGINIA
W. VA.
PENNA.
NEW YORK
MD.
DEL.
N.J.
CONN.
R.I.
MASS.
VT.
N.H.
MAINE
CALIFORNIA
ASPHALT WITH STONE CHIPS USED FOR C.L.
NOTES
C.L. = CENTERLINE
BAR. = BARRIERLINE
* WHITE SOLID C.L. ON BITUMINOUS MATERIAL BLACK SOLID C.L. ON CONCRETE
** WHITE DASH C.L. ON BITUMINOUS MATERIAL BLACK SOLID C.L. ON CONCRETE
*** YELLOW OR BLACK DASH C.L. ON CONCRETE YELLOW OR WHITE DASH C.L. ON BITUMINOUS MATERIAL
**** BLACK SOLID C.L. ON LIGHT SURFACES YELLOW DASH C.L. ON DARK SURFACES.
A ARKANSAS, IOWA AND NEBRASKA USE DASH WHITE C.L. ON BITUMINOUS MATERIAL SOLID BLACK C.L. ON CONCRETE WITH SOLID YELLOW LINE IN CENTER OF DRIVING LANE TO INDICATE "NO PASSING" AREAS
B MISSOURI USES SOLID WHITE LINE FOR C.L. ON HIGH TYPE BITUMINOUS MATERIAL DASH WHITE LINE FOR C.L. ON LOW TYPE BITUMINOUS MATERIAL SOLID BLACK LINE FOR C.L. ON CONCRETE WITH SOLID YELLOW LINE IN CENTER OF DRIVING LANE TO INDICATE "NO PASSING" AREAS
C THE STATE OF VERMONT USES A DASH LINE TO INDICATE C.L. AND A SINGLE WHITE LINE TO INDICATE "NO PASSING" AREAS
D NORTH CAROLINA AND SOUTH CAROLINA USE SAME METHOD AS CONNECTICUT AND VERMONT EXCEPT THAT THEY USE BLACK INSTEAD OF WHITE ON CONCRETE
GALLONAGE OF PAINT REPORTED USED IS INDICATED UNDER NAME OF STATE
INFORMATION SHOWN WAS OBTAINED IN 1949

THE APPROVED PATTERN OF MARKING for center lines and no-passing zones is followed in shaded states. Some of these do not, however, conform with the standards as to color of line markings.

Study Shows Wide Compliance With Uniform Highway Marking

Chas. R. Waters
District Engineer, Department of Public Works, Buffalo, N. Y.

A STUDY of highway markings that has just been completed shows widespread compliance with recommended standards. The study was made for the Committee on Roadway Markings of the Highway Research Board.

Each state highway department was asked how closely its marking of center lines and no-passing areas conformed with the Manual on Uniform Traffic Control Devices for Streets and Highways prepared by the American Association of State Highway Officials, the Institute of Traffic Engineers and the National Conference on Street and Highway Safety, issued last year by the Public Roads Administration.

The replies showed that 30 states are using the geometry or pattern described in the new manual for marking bituminous pavements, but five of these use a solid black line for center line on concrete pavements, instead of the white line called for in the manual. Twenty-five states use the standard pattern on all types of pavement.

Nine states use a solid line for center line paralleled with another solid line in no-passing areas. They are Ohio, Indiana, Illinois, South Dakota, Oregon, Utah, Mississippi, Tennessee and Rhode Island. Three states use a single line pattern; that is, they change from a dash center line to a solid center line in no-passing areas: Vermont, North Carolina and South Carolina.

A solid line in the center of the driving lane is used to indicate no-passing areas in Missouri, Iowa, Nebraska and Arkansas. Two states use the reverse of the manual pattern and show the center line with a solid line and the barrier line with a dash line. They are Texas and Oklahoma.

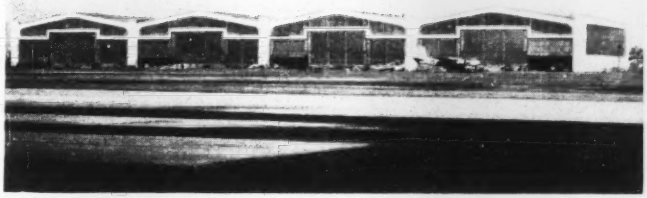
The Canadian Provinces of Ontario, Quebec and British Columbia also use the patterns described in the new research board manual.

Welded crane girders weigh 90 tons, span 110 ft.

Believed to be the largest all-welded girders in the world, 22 steel crane girders, each weighing 90 tons, are being fabricated to carry cranes of 275-ton capacity on a span of 110 ft. They are being installed in a new melting shop at the Abbey Works of the Steel Company of Wales.

As described in THE ENGINEER, Feb. 4, 1949, p. 144, these members are 12 ft. 5 in. deep. Each has a web composed of three plates 106 in. wide and 1 in. thick; flitches consisting of three pieces 19¼ in. wide by 2 in. thick; 36-in. wide flanges made up of two 2¼-in. thick sections and one 2½-in. thick section; end stiffeners 17½ in. by 2 in. thick; and intermediate fabricated tee stiffeners with 11½ x ¾-in. webs and 9 x ¾-in. flanges.

The girders were fabricated by Dorman, Long & Co., Ltd.



Multiple Steel Hangars Completed At Philadelphia's International Airport

E. R. Schofield
Principal Assistant Engineer, Bureau of Engineering, Surveys and Zoning
Philadelphia, Pa.

FOUR STEEL HANGARS, built side-by-side for economy, but not designed for continuity, have been completed recently at Philadelphia's International Airport. In effect, the designers have produced a structure of four single-span rigid frames, connected but not continuous.

The hangars, which cost near $1,750,000, are of steel construction with structural clay tile walls and insulated steel roof decking. While the weight of steel used could have been reduced by continuous construction, such a design was ruled out by the danger of fire. (Fire in any one unit of a continuous structure would of course affect all four units.)

The hangars are arranged in multiple for economy of materials and heat. Each hangar is 150 ft. wide by 122 ft. 6 in. deep, with a two-story 25-ft. deep lean-to in the back.

Each building has five frames spanning its 150-ft. width. These are spaced at 24-ft. 6-in. centers from front to rear, and are made up from 36-in. WF sections at 182 lb. Lighter framing (14 and 16 WF members) is used in the rear bay which adjoins the lean-to. Height of the frames is 39 ft. 9 in. above finished floor at each end and 52 ft. 3 in. at the center.

Specifications gave the contractor the option of using either wood or steel roof decking; the roofing chosen consists of interlocking channel-shaped sections made of 20-ga. copper-bearing, cold-rolled, steel strip. The sections were electrically coated with pure zinc and finished with a coat of baked aluminum. This roofing is non-combustible, neat, and has a high coefficient of light reflection inside the hangar.

Each hangar has three doors of the canopy type, the center door spanning 60 ft. and each side door 40 ft. Counter balanced and electrically operated, the doors are raised in two leaves and are push-button controlled. This door arrangement makes possible the entrance of small planes without need for opening the entire front of the building and thus losing heat. Center doors have a clear opening height of 32 ft., the side doors, 25 ft. When all three doors are opened, planes of the Constellation type can be accommodated.

Large wall and door areas are of glass to assure maximum natural lighting. Corrugated wire glass was used in the pediments over the door and in all walls. Doors have clear window lights above a line 4 ft. 6 in. from the floor.

Artificial lighting is provided by a combination of overhead mercury vapor lights and incandescent lamps, supplemented by incandescent lights located in the side walls about 8 ft. above the floor. These side wall lights throw a horizontal beam beneath the wings of planes, lighting areas shaded from the ceiling lights.

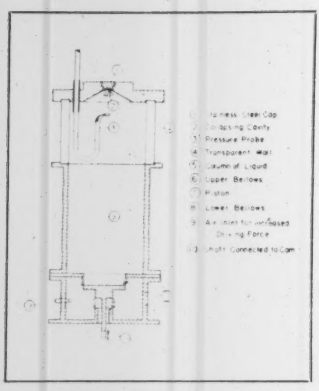
Hot air, forced through ducts placed under the floors heats the hangars; outlets line the walls near the floor line. Floor slabs are of 10-in. thick reinforced concrete, and they rest on a compacted sub-base 3 in. thick. Cast iron pipe leads from floor drains to the airfield's storm water drainage system.

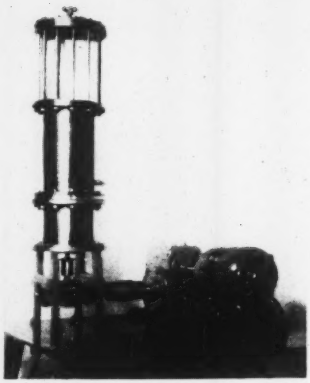
Hangar roofs are insulated with asbestos roof insulation 1 in. thick. This insulation is supported on the aluminum coated steel roofing, and it is covered by five-ply slag roofing.

Fire fighting equipment has been provided by installing four foam nozzles along the walls in each hangar. Each nozzle has 100 ft. of 1½ in. diameter hose attached, and is capable of delivering 450 gallons of foam per minute at 75 psi.

Design and construction of the multiple hangars were under the direction of A. Zane Hoffman, chief engineer and surveyor of the Bureau of Engineering, Surveys and Zoning and Thomas Buckley, director of the Department of Public Works, Philadelphia. Erection of the hangars was done by the Hughes-Foulkrod Company of Philadelphia.

SHOP FABRICATION made possible erection of the horizontal member of the frame all in one piece. The boom in foreground is 117 ft. long.





STATIC-PRESSURE TYPE APPARATUS makes possible control of variables affecting cavity collapse, promising detailed data on cavitation.

Cavitation Research Speeded By New Equipment

W. S. Hamilton and E. A. Beck
Associate professor and research assistant
Department of Civil Engineering
Northwestern University

DEVELOPED over a two-year period, an apparatus for fundamental cavitation research is now operating at Northwestern University. Its possibilities promise detailed data of the effect of cavitation on various types of material.

The equipment may be classed as a static pressure type, because the cavity forms when the pressure at the top of the inclosed liquid column is slowly reduced to the vapor pressure of the liquid.

Liquid completely fills the cylinder (see drawing) and is enclosed by air-tight boundaries. Hence, when the piston is drawn downward by the cam-operated shaft, a bubble of vapor forms in the cone-shaped top of the container.

The cam (not shown) is cut so as to release the shaft suddenly, whereupon atmospheric pressure drives the piston upward, allowing the bubble to collapse.

The space surrounding the bellows and piston ordinarily is open to the atmosphere, but an external air-pressure source may be connected to increase the force that accelerates the piston upward.

This type of apparatus was selected for fundamental research because it allowed excellent control of variables that may influence rate of cavity collapse, magnitude of pressure shocks, and resultant damage to materials.

For example, liquids other than water may be used, and if it is properly selected and heated the coefficients of surface tension, viscosity and elasticity may be varied independently. If the size of liquid molecule influences the damage caused by cavitation, its effect may be studied separately. The size and air content of the cavity and the hydrostatic load causing it to collapse are also controllable.

Porous materials to be tested

One of the first uses will be to determine whether or not relatively weak and porous materials—such as mortar—are damaged by cavitation when the cavity does not collapse directly against the material. It may be found that the shock waves that radiate from the point of collapse are sufficiently intense to damage concrete one inch away, but perhaps not after traveling six inches. If this is the case, there would seem to be a reasonable possibility of using cavitation to help dissipate energy of a flowing fluid without damaging the boundaries.

In this line, baffle piers—used at the foot of spillways to break up the bottom current and stabilize the hydraulic jump—sometimes are pitted by cavitation. In some instances, model studies have been undertaken to determine pier forms—a procedure usually resulting in designs with rounded upstream corners. Rounded piers are not completely effective as baffles and a better shape—such as trapezoidal section with the broad base upstream—could be used if the cavities forming at the upstream corners collapsed far enough out from the sides.

Studies of damage to materials will be supplemented by instantaneous pressure measurements near the bubble. Strictly speaking, point pressures are not measurable when a pressure gradient exists, but a small tourmaline crystal on the end of a probe will be used to determine the average on an area about $\frac{1}{8}$ of an inch in diameter, at various distances from the point of collapse.

The so-called static-pressure type of apparatus has been used previously by M. F. M. Osborne (See Transactions, ASME, Vol. 69, No. 3, pp. 253-266), who operated a comparatively simple piston-and-bellows arrangement to study the shock produced by a collapsing cavity.

The motor-operated equipment was designed by the authors.

Vetoes change works program in Hawaii

Vetoes by Governor Ingram M. Stainback have changed the public works program set up by the 1949 Hawaii legislature.

While a $3,000,000 general obligation bond issue for a Kalihi valley traffic tunnel has been vetoed, Mayor John H. Wilson of Honolulu says the city will go ahead with the approach roads for the tunnel anyway. In 1951 the city will again seek funds for the tunnel, he says. The territorial public works department is now in a position to go ahead with a rival tunnel through Nuuanu Valley. It has the assurance of U. S. federal aid for the tunnel and its approaches, which the Kalihi tunnel did not have.

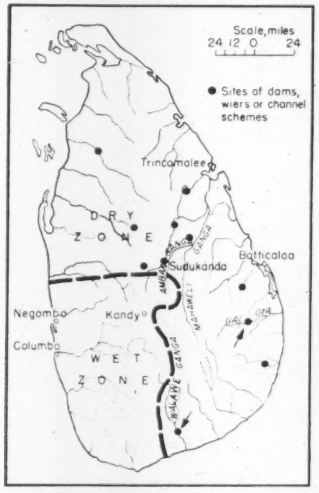
The territorial works department is calling for bids on $1,400,000 worth of other construction in June.

Coast Guard commissions open to civil engineers

The United States Coast Guard has immediate need for a limited number of graduate civil engineers under 31 years of age and with some practical professional experience.

Officers selected will fill posts in active duty ranks on maintenance of more than 22,000 Coast Guard establishments. The grades of lieutenant j.g., or ensign are available, depending upon qualifications. Those interested should write the U. S. Coast Guard, Washington 25, D. C.

DEVELOPMENTS ABROAD



RIVER DEVELOPMENT PLANS of Ceylon involve $210 million worth of dams and irrigation channels. Work has started at Gal Oya multipurpose project and will soon begin at Walawe Ganga (see arrows on above map). Paul von der Lippe (left), U. S. engineer-adviser borrowed from the Bureau of Reclamation, turns sheets for Dudley S. Senanayake, Ceylon's Minister of Agriculture and Lands, as they discuss the plan to irrigate 372,000 acres.

Ceylon—American dam builders are at work here on the big island off the southern tip of India in the Indian Ocean to ease the food production problem of a highly concentrated population. Two projects of the government's ambitious irrigation program (ENR April 24, 1947, p. 4) are already in the works. Construction of one has begun, and bids have been invited for the second. Together, they will cost close to $70,000,000.

In the leopard-infested, elephant-haunted jungles of the island's Eastern Province, an American team—made up of John L. Savage, consulting engineer (see this week's cover), Paul von der Lippe, Reclamation Bureau engineer on loan to the Government of Ceylon, and the Morrison-Knudsen Co.—has started a $48,000,000 multipurpose project on the Gal Oya River. They are showing what can be accomplished on the principles that President Truman enunciated under Point 4.

Harnessed water from the Gal Oya dam will irrigate 100,000 acres or more for one crop of rice paddy cultivation, capable of producing 5,000,000 bu. of rice a year. Thus will be created the largest single rice producing area in Southeast Asia. The M-K outfit is building the dam—and an incidental, highly useful powerhouse—under a contract for some $14,000,000.

With dynamite, bulldozers and helicopters the dam builders are racing the monsoons to complete the project in four years—maybe less. Swedish-born American H. Olsen runs the job for M-K. Said he, in March: "The job might be done in three years if the weather goes right for us." Now that the May-June southwest monsoons have come, he may feel less optimistic.

Even by American standards, the project is of good size. For Ceylon, it is in every way the biggest irrigation scheme so far attempted. A rolled earthfill dam 154 ft. high and 4,000 ft. long—containing nearly 6,000,000 cu. yd.—will store 770,000-acre-ft. in a lake with water surface of 30 square miles.

Four 2,500-kva. vertical-shaft generators driven by 3,000-hp. Francis-type water wheels—with an effective head of 100 ft.—will eventually go into the power plant. The initial installation calls for two of these units.

Mr. von der Lippe went to Ceylon as the result of a request about a year ago by the island's young government—granted independence in February 1948. Reclamation lent him to the State Department to fill the job of technical adviser to Ceylon's Minister of Agriculture and Lands, Dudley S. Senanayake. In his advisory position he has helped to develop and implement plans proposed for the Gal Oya project by Mr. Savage.

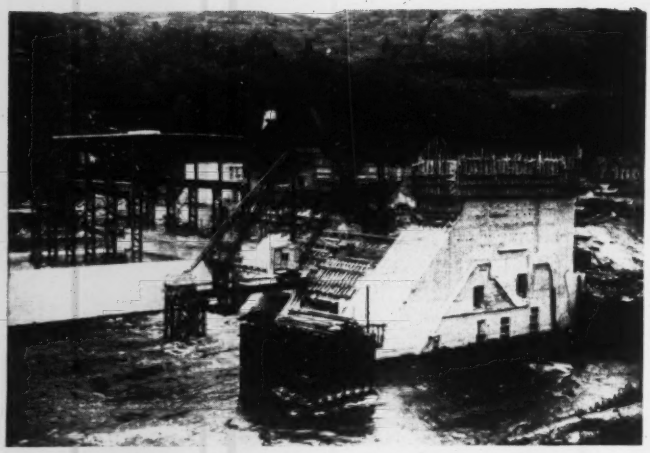
M-K's design affiliate, the International Engineering Co., of San Francisco, drew the plan for the project. When the job came up for award, the government let the construction contract to the M-K parent concern, despite the competition of several British firms.

Just recently the Ceylon government invited engineers and contractors to submit their qualification and experience records for a second big job—a multipurpose project on the Walawe Ganga, 100 miles southeast of Colombo, the island capital. This project may cost 60,000,000 rupees—or $20,000,000. The government wants to take bids soon in order to start construction early in 1950 on the four-year job.

The Walawe Ganga dam will be 17,500 ft. long and 110 ft. high above riverbed. It will have a concrete spillway 855 ft. long and 118 ft. high controlled by nine radial gates between gravity abutments. The powerhouse at this site will contain three 3,750-kva. generators driven by 4,700-hp. turbines.

For the Gal Oya project, the government has big colonization plans. Eventually each colonist family—peasants from overcrowded areas—will get 5 acres of paddy land and 3 acres of garden space. Besides furnishing irrigation water, the government will clear each small farm, build a cottage,

STILTS REPLACE LADDERS as carpenters go to work on stands for a French fair held in Paris. These workmen claim they can work faster on stilts and also point out that ladders cost more. (Wide World Photo)



SCOTCH-HIGHLANDS HYDRO SCHEME—This is Pitlochry Dam and power station, in northern Scotland—one of two units under way in a three-unit hydro-electric project designed to put out 300 million kwh. yearly. It will take water from Clunie power station—two miles by tunnel below Clunie Dam on the east end of Loch Tunnel. Pitlochry Dam will be 475 ft. long and 54 ft. high. (British Combine Photo)

arrange for marketing of produce, and see that the family has enough to get along for the first six months.

Roads, domestic water supply and maintenance of the irrigation canals will be the responsibility of the government. Land is opened to the colonists under terms that are a compromise between outright sale and lease. The colonist has to make no down payment; he gets the use of the land for a small annual payment, provided he complies with certain conditions regarding the land right.

In early April, Mr. von der Lippe reported that M-K's pioneer force of 30 men was already hard at it on the Gal Oya job. In a few months the contractor will work three shifts, and American machines will get a chance to show how mechanized equipment beats the old basket method, still used all over the island.

Workers are to have clean air-conditioned living quarters and airborne milk supplies. The government marketing department is building kitchens on the edge of the jungle to supply 8,000 hot meals a day.

U. S. exports "show-how"

Southern Rhodesia—American know-how and show-how—specifically the techniques and construction methods developed by the Bureau of Reclamation in building of earth-fill dams—are being carried abroad to Southern Rhodesia, in Africa, at the request of the State Department.

David R. May, construction engineer on the recently completed earth-fill Jackson Gulch Dam of the Mancos Project, Colorado, has arrived to spend three months in Rhodesia. His salary and expenses are being paid by the Rhodesian government.

The request for the services of a Bureau of Reclamation engineer came as a result of a trip to the U. S. by C. L. Robertson, former Secretary of Irrigation and Agriculture for Southern Rhodesia, and two engineers from the Union of South Africa. They visited the Denver design and construction office as well as several bureau dam projects.

Honduras—Jorge Colindres, highway engineer of Honduras, has been sent on a three-months visit in the United States to study highway construction. He is particularly interested in bridges and various types of paving. His visit was arranged by the State Department in cooperation with the Public Roads Administration.

Mr. Colindres received five years of engineering training at the Polytechnic School of Hanover, Germany. With the highway department of Honduras since 1938, he has served during the last six years as chief of the Honduran section of the Inter-American Highway.

India—F. H. Kellogg, Chairman of the Department of Civil Engineering in the School of Engineering at the University of Mississippi is now consulting engineer to the Government of Bombay, India. In this capacity he is to direct and review construction operations being performed on the Ganjapur power and irrigation project in Bombay Province.

Bombay has decided to handle its own construction rather than letting it out to foreign contractors, partly to gain experience in modern construction methods. Mr. Kellogg will review work and aid in planning the big project.

Also from India comes the announcement that the U. S. Bureau of Reclamation has agreed to make an analysis of the proposed 760-ft. dam the government hopes to construct across the Kosi River in Nepal. The tests will be made with models, and a group of Indian hydraulic engineers will be sent to America by the Central Water Power and Irrigation Board to assist in the tests.

The dam, when and if constructed, would be 20-ft. higher than the proposed 740-ft. dam across Hell's Canyon near the Idaho-Oregon border. J. L. Savage, Walker R. Young and F. A. Nickell, American high dam experts all have been called in to examine the project.

Australia—According to Canberra sources, President Truman has given Australia an assurance of American assistance in the Snowy River hydro-electric project which is to provide the Commonwealth with a huge and secure power potential for vast new defense industries (ENR Sept. 9, 1948, p. 5).

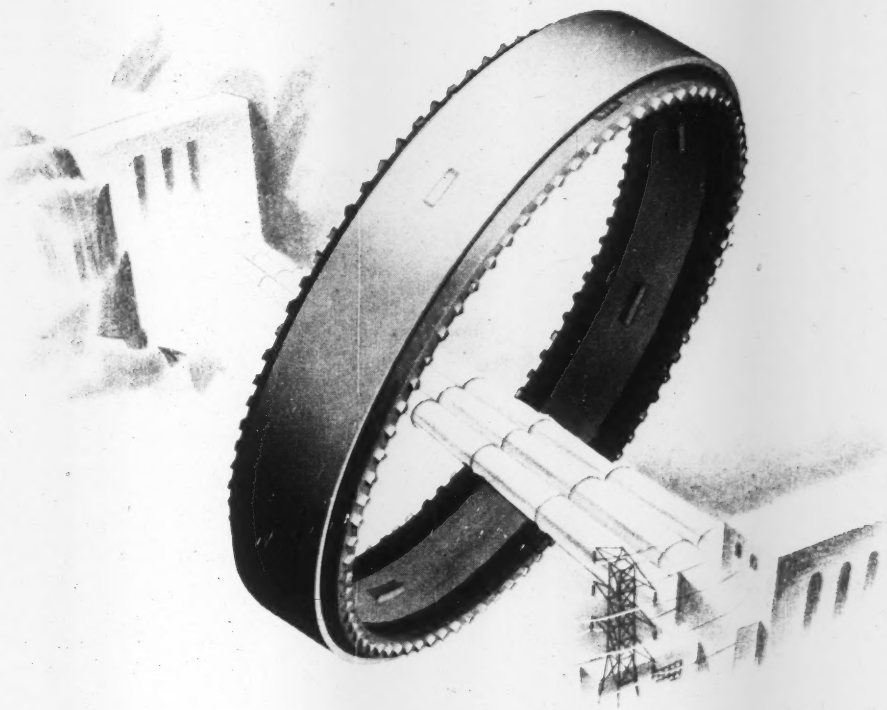
The President is said to have promised to make available American engineering know-how and to lend any experts Australia may need.

Australia will seek from the U. S. and also from other countries the services of well-equipped contractors. There is special interest in American rock tunneling teams.

A bill to set up a Snowy River authority is before the Australian parliament.

Sixteen underground power stations scattered in remote mountains are to produce power for secret defense research and for new industries. The capital cost of the project is estimated at between $550- and $650-million. The planners envisage the mushrooming of new population and industrial centers in the Murrumbidgee and Murray River valleys, with a combined population of 1,000,000 people.

When all power stations are in operation, as much power will be produced as in the whole of Australia today, and at about one-third of today's cost. The combined potential of the sixteen stations will be 1,720,000 kilowatts.



Canadian Power Project runs rings around its schedule

In mountain country, one hundred and thirty miles north of Vancouver, British Columbia Electric Co., has built a new hydroelectric plant. One thousand tons of water must be piped down a 41° mountain every minute! It called for a penstock (pipe lines) over 75" in diameter. Special pipe couplings had to be designed to withstand the pressures never before attempted at such diameters.

Dresser Manufacturing Division got the task because it specializes in solving difficult pipe joint problems. It can tackle with assurance what has never been done, because it is part of a large company with facilities covering every type of pipe line, for water, gas and oil as well as machinery, the pumps, compressors or blowers, at both ends.

The new couplings Dresser engineered, tested at 1,300 lbs. per sq. in. They reduced construction time from months to weeks and the job was completed months ahead of schedule. This sort of thing is why the Biggest Jobs Are Going to Dresser. Address inquiries about any aspect of pipe lines and penstocks to Dresser Industries, Inc., Cleveland, Ohio.

BOVAIRD & SEYFANG Mfg. Co., Bradford, Pa.
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BIG IN VALUE

B37 Paving Breaker

joins famous Gardner-Denver family

Weighs only 38 pounds! Yet the Gardner-Denver B37 Paving Breaker is packed with many of the same big values that have proved so popular in the medium B67 and heavy B87 machines.

The tough-slugging B37 makes fast work of light demolition jobs. It's light and safe in the hands of the operator who must work from scaffolding, or wherever footing is treacherous. It's built to endure years of hard work. Here are some of the reasons why:

Renewable chuck liner — easily replaced at low cost — a new liner protects both tool and breaker against a loose-fitting shank.

Double-life hammer — block type piston hammer is reversible for double life — an exclusive feature. Use of tappet minimizes wear on hammer striking face. Tappet operates in renewable bushing.

Extra safety — exclusive throttle valve lock works like the safety on a gun — prevents accidents before they happen.

Easy riding — fast cutting action without violent recoil means less operator fatigue. Holding handles stay cool.

Low air consumption — with efficient low-lift plate valve. Long piston stroke gives hard-hitting blow. Exhaust will not "freeze."

Quick acting latch type steel retainer — holds tool securely.

Positive lubrication — integral oil reservoir meters oil to every working part, including tool shank. Lubricated shank reduces chuck wear and breakage of gads.

For complete information, write Gardner-Denver Company, Quincy, Illinois.

Specifications for GARDNER-DENVER B37 PAVING BREAKER

Weight	38 lbs.
Piston Diameter	1⅞"
Length	22"
Size of Tool Shank	1" Hex. x 4¼"
Air Hose Recommended	¾"
Weight, Boxed for Shipment	61 lbs.
Boxed Dimensions	8" x 16" x 26" 1.9 cu. ft.

GARDNER-DENVER

SINCE 1859

MUNICIPAL AFFAIRS

DEVELOPING DOWNTOWN OTTAWA as a planned city and federal government center is the crux of elaborate programs now under discussion in Parliament. A six-block area around the Parliament building (center, above) will be redeveloped.

Extensive plans for the development and improvement of the Ottawa Federal District have been laid before the Canadian Parliament.

W. L. Mackenzie King, as prime minister, had expressed the thought that the development of the capital area should be a lasting monument to the men and women of the Canadian armed services in the war, and that view has been endorsed by the federal government.

The erection of many permanent public buildings is an essential part of the National Capital Plan. Wellington St., from Kent St., to Bay and Albert Sts., six blocks in all, will be the focus of the government's plan to establish new public buildings. Those being considered for "immediate and short-term operations" are: A Department of Veterans' Affairs building; headquarters for the Department of National Defense; Bureau of Statistics; a National Film Board building; Ottawa City Hall; an institute of fine arts, comprising a National Theater and National Art Gallery; laboratories and workshop for the Public Works Department; Department of Health laboratories; and a national stadium and sports center. Across the river in Hull, Que., a new National Printing Bureau would be built.

It is planned to create a plaza extending from Sparks St., to Albert St. In the center of this area would be located an auditorium and convention hall with a capacity of 10,000.

Approximately 900 sq. mi. of land lies within the National Capital Planning area, but of this only 200 sq. mi. will be subject to physical planning. The remainder will be placed in a protective category to preserve its rural character and its attractions for tourists. There will be extensive widening of streets and roads, and some new bridges will be built.

Building Code Revisions

Three cities prepared to take action last week on revising their outdated building codes. All three aimed at flexibility to permit the use of changing techniques and materials.

At Minneapolis, Minn., voters approved removal of the code from its place as part of the city charter, where it was cumbersome to amend, and the city council was given direct power (by a two-thirds vote) to enact building regulations to fit changing construction trends.

As a first step toward revision of the city building code as it applies to housing, the council decided to create a seven-member advisory committee with Ralph A. Andersen, city building inspector, as chairman. Other members are to be appointed by the Building Trades Council, Minneapolis Chapter of the American Institute of Architects, Minneapolis Engineers Club, Associated General Contractors, and the Builders Exchange.

The Akron, Ohio, city council is expected to enact a new building code this month, following after more than a year of hearings. The new code will be of the performance type—intended to permit the use of any material builders can show is strong enough and safe enough for the purpose intended. Builders Exchange of Akron said contractors are practically unanimous in giving approval to most of the code work already done.

At Youngstown, Ohio, a proposed new building code is being distributed to engineers, contractors, building tradesmen, and others, before being submitted to the city council. Public hearings on the code will begin in the fall. Representing nearly three years' work by a committee of volunteers, it is based on the Southern Standard Building Code. The city's existing code was written in 1930 from the Pacific Conference Code. The proposed new statute will also be of the performance type.

Traffic and Transportation

Traffic problems and the associated one of parking are now recognized as an almost universal menace to urban stability, and the discovery of solutions is the most important municipal undertaking of the day, the 34th St. Midtown Association of New York City said last week.

In a report by its city planning committee, the association calls attention to the fact that many cities are undertaking surveys on origin and destination, parking habits, and traffic flow; that some have traffic commissions or traffic engineering bureaus, or separate traffic and parking authorities.

Other subjects considered in the report include: The abolition of trolley cars; state legislation on parking, private financing, independent authorities, private off-street loading and parking, central freight terminals, expressways, parking meters, parking bans, one-way streets, staggered lights.

Latest highlights in the municipal traffic and transportation news include these items:

Because the financial burdens of solving parking problems are too great for the city treasury to bear, the New York City traffic commission is considering the idea of turning over parking matters to a self-supporting agency, which would be empowered by special act of the state legislature to issue bonds to finance such ventures as the installation of parking meters, and the

(*Continued on page 30*)

This building would

examples of changes made during construction at low cost

DUST COLLECTING SYSTEM —its exact location was not determined until after the building was well along.

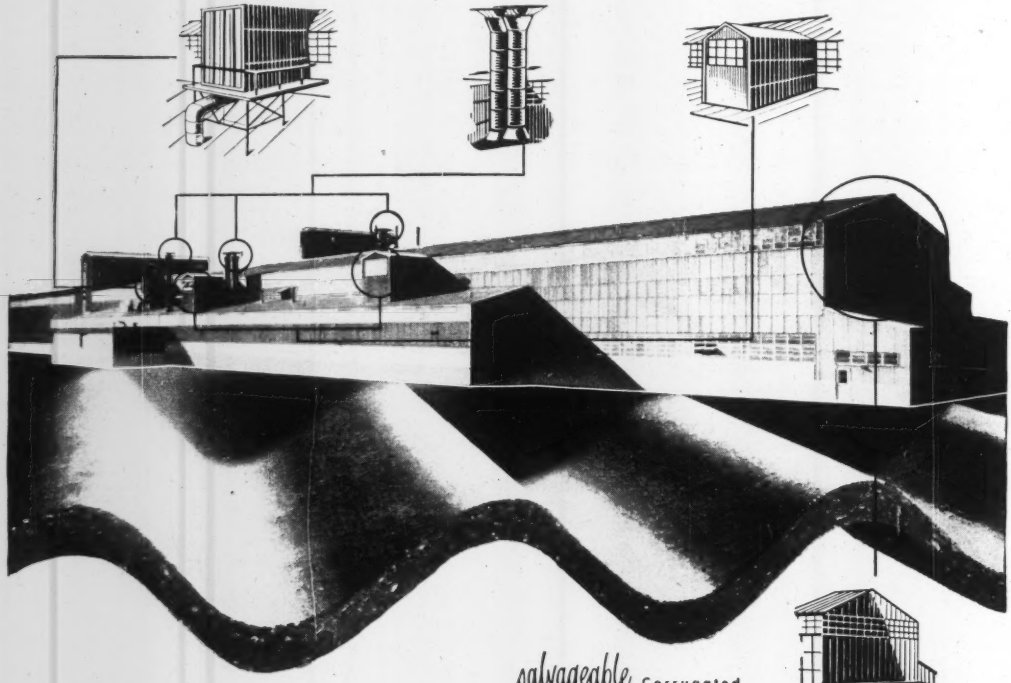
Due to the flexibility of Corrugated Careystone, even major changes and additions were made quickly and with relative ease and economy.

STACKS — to take off exhaust from paint and ceramic coating spray booths.

Careystone's resistance to fumes and heat made these additions practical and economical. No special protective materials were necessary.

PENTHOUSES—to house vertical conveyors at temperatures up to 150° F.

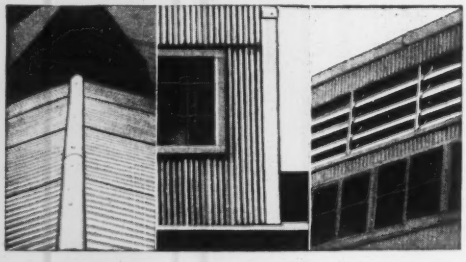
New wall openings made after walls were in place . . . with a minimum of time and expense. All Corrugated Careystone was reused in the new plan.



salvageable **Corrugated Careystone is durable, strong, inorganic, fire-resistant, easy-to-handle and apply. Its modern design fits it for modern interiors and modern exteriors—for a new kind of modern construction.**

END WALL—designed for future expansion. Wall can be dismantled and Corrugated Careystone reused if building is extended to gain more floor space.

Ridge Rolls, Corner Rolls (inside and outside) and Louvres, all made of Asbestos-Cement, are available from Carey in sizes to fit all construction requirements



easy application

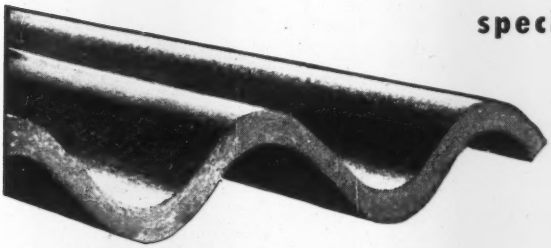
SAW IT **NAIL IT** **BOLT IT**

cost you 40% less, too, with Carey stone

We built this plant with our own products . . . to make more products to build more plants! We estimate we saved as much as 40% over conventional masonry construction by using Careystone Corrugated Asbestos-Cement Sheets. This should be real news for you—especially if you are making plans for a new building or changes in present ones. We needed to get a new plant into operation quickly. We did it by building it with Corrugated Careystone.

For commercial and industrial building and for all light-weight construction, we know of no building method that takes less time in erection; that withstands weather any better; that offers more flexibility in usage or expansion; that requires less maintenance; that provides more protection from fire, weather, decay and rot; or that costs less.

Most plants undergo some changes while under construction. Buildings built with Asbestos-Cement Careystone, Corrugated or in flat sheets, cost less to change, cost less to build, cost less to maintain!



SEE FOR YOURSELF. Write Carey for "Manual 808"—address Dept. EN-6.

specifications of corrugated Carey stone

FOR WALLS • ROOFS • PARTITIONS

1. 4.2" Corrugation. 2. Approximately 3/8" thick 3. Weight: 3.75 lb. per sq. ft. 4. Length: Up to and including 12'. 5. Width: 42" 10 corrugations. 6. Maximum purlin span 4'6". 7. Maximum girt span 5'6".

Enclosure strips, fasteners and accessories, made especially for use with Corrugated Careystone, can also be furnished by Carey.

Flat Asbestos-Cement Sheets
85% Magnesia • Asbestos
Industrial Rock Wool
Pipe Coverings
Blocks • Batts • Papers
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construction of off-street parking lots and garages.

In Philadelphia, the highway traffic board has approved a recommendation that $3,000,000 be spent at once to put into operation the 8th St.-Locust St. subway as an extension of the Delaware River Bridge high-speed transit line. The engineering committee, headed by R. F. Tyson, advised that $2,000,000 be spent for tracks, electrical equipment, power lines and station equipment and $1,000,000 for 10 subway cars. The board deferred until 1950 plans for widening and doubletracking 33rd St. and improvements on Walnut St. between 32d and 34th Sts.

Canadian and American contractors are currently figuring on the first two sections of the Toronto, Ont., rapid transit subway. Companies receiving specifications from the Toronto Transportation Commission include Canadian companies from Toronto and Montreal, several with associates in London, England, and a representative list of American subway builders from as far west as Minneapolis, Minn.

Underground parking in Detroit

The Michigan Supreme Court has given the go-ahead to Detroit's plans for a municipally-owned parking garage under downtown Washington Blvd. The court ruled that the project was within the legal scope of city activity and that property owners had no claim to damages unless the street was widened or damage to property actually occurred.

Previously, a circuit judge had held that the underground garage was an illegal venture in competition with private enterprise. Moreover, he ruled that all abutting property owners would have to be reimbursed for damages, since they own to the center of the street.

The city's entire off-street parking program, held in abeyance pending final court action in this case, may now be put through.

A program of street development to cost between $35,000,000 and $40,000,000 by 1960 has been adopted by the Phoenix, Ariz., city council. Corwin R. Mocine, city planning director, said half of the cost would be borne by the city and the remainder by property owners fronting the thoroughfares. The plan resulted from two-years' research by the city planning department, city and county engineers and state and federal highway officials.

A bill to enable Toledo, Ohio, to construct and operate a toll bridge across the Maumee River has been approved by the Ohio house of representatives.

GOOD AIRPORT DRAINAGE—A new drainage system provides for removal of surface and underground water from the field and adjacent areas at the Grand Haven, Mich., airport. Some 5,430 lin. ft. of 6 in. drainage pipe and 2,250 ft. of 8-in. pipe now underlie the field's two 4,300-ft. runways and one 2,400-ft. runway. Vitrified clay skip-pipe, a product of The Robinson Clay Product Co. of Akron, Ohio, was used. Motor joints are unnecessary and special lugs in the bell make correct alignment. General contractor for the project was John F. Walser of Pontiac, Mich.

Northwest Airport Activity

A system of secondary airports for the Twin Cities area of Minnesota will be the result of a decision by the metropolitan airports commission to develop a publicly owned airport on Hudson road, east of St. Paul. Farm land on which the port will be built will be acquired by condemnation if necessary.

The aviation group gave final approval to plans for runway surfacing at Flying Clour airport east of Shakopee. The group is in the process of taking over Crystal airport at Robbinsdale and is acquiring land in Anoka County near New Brighton for future airport purposes whenever conditions are right for construction.

Bids totaling $842,130.70 for improvements this year at Billy Mitchell field, Milwaukee, Wis., have been accepted by the county board. The program includes extending the northeast-southwest runway on the southwest end, grading and installation of lights. J. D. Bonness, Inc., of Milwaukee, was the low bidder, offering to do the work that originally had been set forth in the specifications for $716,319.20 for more than $130,000 under the estimated cost on which an application for $450,000 in federal aid had been based several months ago.

MUNICIPAL BRIEFS

Tax Revenues – Municipal sales taxes will provide approximately $28 million in operating revenue to California cities in the next fiscal year, the Municipal Finance Officers Association reports.

Planning Survey—Under the auspices of The American Institute of Architects, A. Whitney Murphy of Butler, Pa., will undertake a five-month survey of the extent of needed planning in American cities with populations under 50,000.

Trenton Water—Havens & Emerson, New York engineering firm, has been studying the water system of Trenton, N. J. and reports that the city will have to spend between $3,400,000 and $5,800,000 to make vitally needed improvements and additions to the city water works—to improve the taste of the water, increase pressure and provide room for expansion during the next 50 years.

Less Floods—Municipal engineers of Philadelphia, Pa., have eliminated a 2500-ft. loop of Frankford Creek through a section of the city. A sluice diverts the stream into a new 900-ft. channel, lessening flood danger.

Protection—A House public works subcommittee has been asked to approve a $1,842,000 harbor project to prevent storm damage at St. Augustine, Fla., where shifting channels have exposed the main street and ancient Fort San Marcos to damage from high tides.

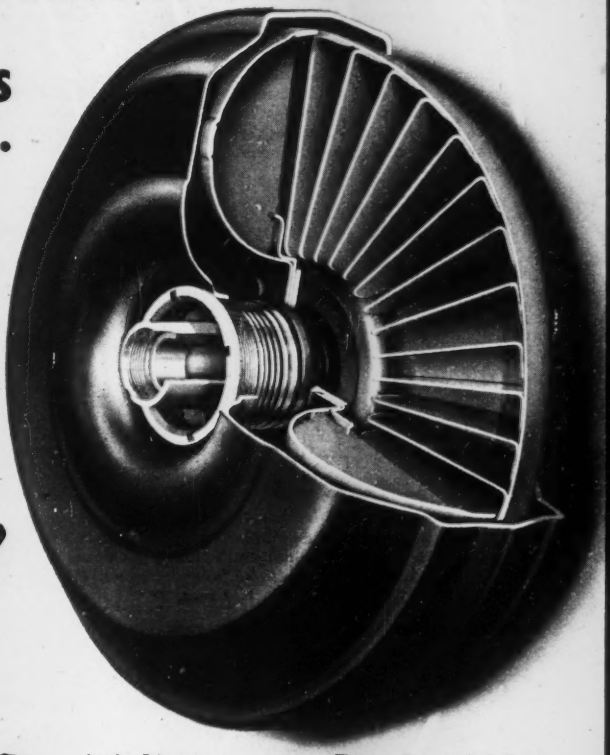
Employment—State and local governments in the United States are employing a record number of citizens, the Civil Service Assembly reports. Nearly 4,000,000 persons were employed by states and localities in January, recent Census Bureau figures reveal—almost double the 2,089,000 now employed by the federal government. Postwar growth of cities, population increase of the entire country and expanded state and local services were credited with boosting state, city, county and school district employment to the all-time high of 3,994,000.

Not as Guaranteed—A "blast proof" manhole cover blew up recently in front of the Massachusetts Public Works Building on Nashua Street, Boston. No one was hurt, but there was a terrific blast and flames shot up 50 ft. from the opening. The cover was not found for some time after the explosion.

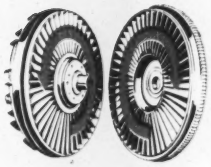
Great News from Chrysler!

CHRYSLER INDUSTRIAL ENGINES now available with...

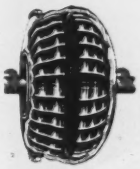
gyrol Fluid Drive at Amazingly Little Cost!



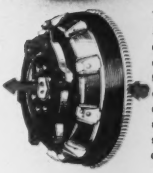
Actually only slightly more than the conventional flywheel which it replaces.



Driver and Runner flywheels are shaped like shallow bowls fitted inside with fins. They operate as separate units, with no mechanical connection—no metal-to-metal contact.



As the Driver turns inside the sealed steel drum, the confined oil produces a powerful swirling out-thrust. Instantly, the Runner receives the impulsion and transmits smooth power to the load.



The coupling is an integral unit. No adjustments are necessary. Oil maintains required fluidity over a wide temperature range. Remains unaffected by seasonal temperature changes.

PROVED on more than a *million* Chrysler, DeSoto and Dodge passenger cars and trucks over a period of 11 years.

PROVED on thousands of industrial jobs—scores of applications under rugged field conditions.

Chrysler's famous Fluid Coupling opens a whole new field for the improved operation of power equipment! A way to reduce excessive clutch wear! A way to protect equipment from damaging shock overloads! A way to get gradual *oil-smooth* acceleration. A way to assure better performance, longer wear and lower upkeep. A way to secure many other advantages peculiar to your equipment. *—at negligible small cost!*

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HORSEPOWER WITH A PEDIGREE

MEN AND JOBS

Albert R. Decary, superintendent of dominion public works in the province of Quebec for 40 years, has been granted an honorary doctor of science degree from Laval University.

Edwin B. Karn of Boise, Idaho, has become Boise River watermaster, succeeding **William E. Welsh** who resigned to become secretary-manager of the National Reclamation Association in Washington, D. C.

J. V. Otter, former Idaho commissioner of public works and for the last several years an engineer with Morrison-Knudsen Co., was appointed to the newly-created post of commissioner of public works of Boise City. He will supervise all construction in the city.

Clay P. Bedford of Berkley, Calif., a 1925 graduate of R.P.I., has been made executive vice-president of the Kaiser-Frazer Corp. at Willow Run, Mich. He started in with the Kaiser enterprises right after graduation, and has been general superintendent in the building of Bonneville and Grand Coulee dams, and was a member of the 3-man operating committee in charge of the construction of the $54,000,000 U. S. Navy Air Station at Corpus Christi, Tex.

P. L. Pratley of Montreal, has been put in charge of all engineering and construction work on the $13,500,000 Strait of Canso bridge between Cape Breton Island and the mainland of Nova Scotia. A graduate of Liverpool University, he designed the Jacques Cartier Bridge, Montreal, Ile's d'Orleans Bridge, Quebec City, Lion's Gate Bridge, Vancouver, and was Canadian consultant for the Detroit Ambassador Bridge project.

Frank V. duPont has resigned as chairman of the Delaware State Highway Commission after serving in that position for 22 years.

H. E. Leilich, formerly mechanical engineer and power plant project manager for the Rust Engineering Co. has joined the staff of the Peter F. Loftus Corps., engineers of Pittsburgh, Pa.

William R. Goerke, structural engineer, for many years with Alexander D. Crosett, has joined Strobel & Salzman, consulting engineers, New York.

William H. Mills, former chief of the airport engineering division of the

(*Continued on page 35*)

Six staff members of the Waterways Experiment Station and three hydraulic consultants, at a recent meeting in Vicksburg, Miss., are (left to right): Lt. Col. R. D. King (director of the station), E. H. Woodman, R. T. Knapp (California Institute of Technology), R. Y. Hudson, Hunter Rouse (Iowa State University), T. E. Murphy, A. T. Ippen (MIT), E. P. Fortson, Jr., and R. R. Brown.

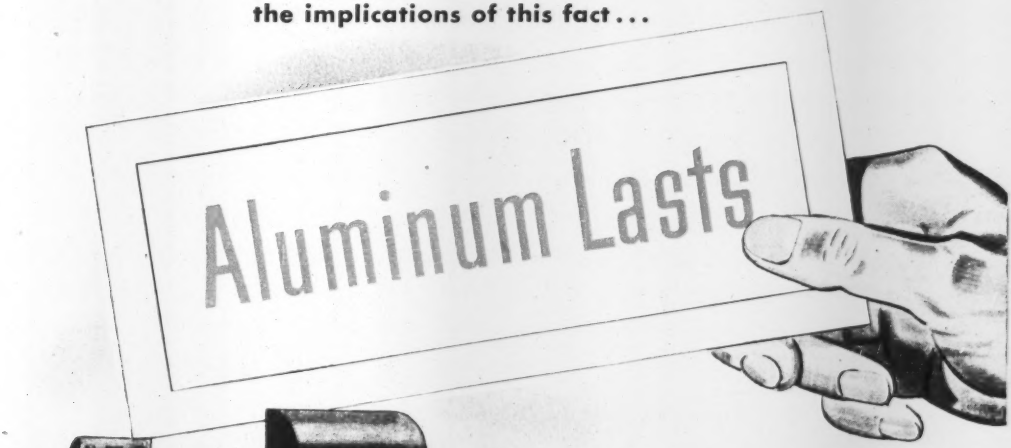
Leaning on gleaming shovels, A. C. Roehm, E. T. Manderson and L. S. Youngling, left to right, break ground for a new telephone building in Lynbrook, N. Y. They are, respectively: engineer of buildings, Long Island Area, N. Y. Telephone Co.; resident engineer for Voorhees, Walker, Foley and Smith, architects; and resident engineer for the phone company. Cuzzi Bros. and Singer, Mt. Vernon, N. Y., is general contractor. (Griffin Wellpoint Corp. Photo).

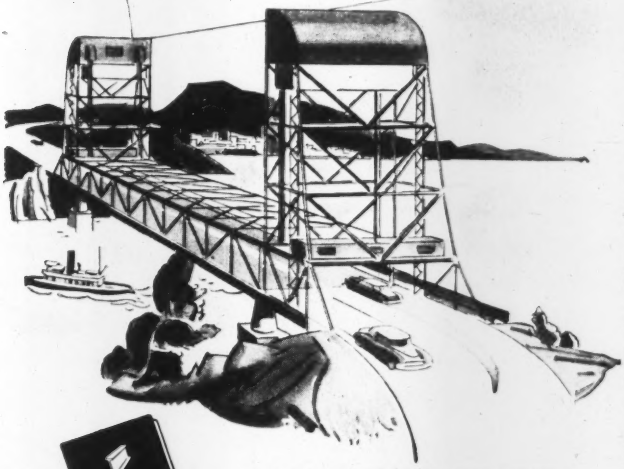
George D. Whittle has joined the staff of the division of San Francisco Bay Toll Crossings, California Department of Public Works, as special assistant to Chief Engineer Ralph A. Tudor. Mr. Whittle goes to his new position after 31 years of service with the Public Roads Administration, where his last assignment was that of bridge engineer for projects in California, Nevada, Arizona and Hawaii. He received his B. S. degree from Southwestern University in 1905 and in 1908 completed his engineering studies at M.I.T. The Tudor staff is now engaged in further engineering studies in preparation for the construction of a 2d bridge across San Francisco Bay.

Planners... **who no longer need reminding**

that aluminum saves weight, are urged to consider

the implications of this fact...





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It contains 229 pages of design information, specifications and technical data on structural aluminum products; plus available structural shapes.

in terms of a BRIDGE, for example

Granted there are still improvements to be made in bridge design. But one direction in which major improvement can be expected is in release from costly maintenance. The engineer who leads in that direction will inevitably lead in the direction of aluminum.

This kind of planning should start now, with the kind of help our Development Division is equipped to give. Help based on sixty years of knowledge of alloys, fabricating methods, of thousands of tests that permit us to say "Alcoa Aluminum Lasts" —and mean it. Your first step is to write for the Alcoa Structural Handbook. ALUMINUM COMPANY OF AMERICA, 2108 Gulf Building, Pittsburgh 19, Pennsylvania.

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Steers Easily with a GEMMER GEAR

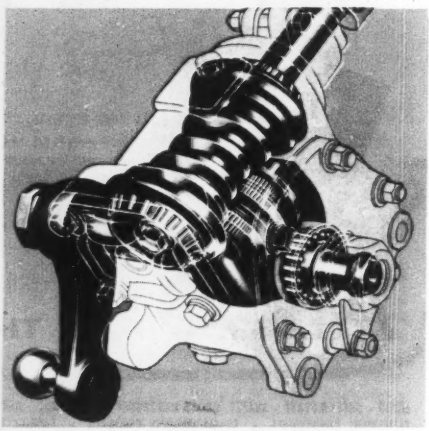
These heavy loading machines put the steering gear to test. Slow moving, steering them is like continuous parking.

Nelson Loaders steer easily because they have Gemmer Steering Gears. The Rolling Tooth Sector and liberal use of antifriction bearings provide the high efficiency that is absolutely necessary.

Gemmer Steering is easy on heavy vehicles of all kinds. And it is better steering—always firm, responsive and positive, it has no rubbery feeling or wander. It has an abundance of strength—is exceptionally durable.

A Gemmer Steering Gear will last the life of the vehicle, with reasonable care.

Gemmer Steering has been preferred by makers and users of power vehicles for 42 years. 3686



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Civil Aeronautics Administration in Atlanta, Ga., has been named district engineer in charge of the newly-established Atlanta office of the Asphalt Institute. Mr. Mills will cover Georgia, Florida, Alabama, Mississippi, Louisiana and Tennessee. A graduate of Clemson College, he was with the South Carolina Highway Department for 20 years, five years with the U. S. Corps of Engineers, and two years with the CAA.

Fred T. Paul, who retired as Minneapolis, Minn., city engineer last year, has been retained by the Minneapolis-St. Paul metropolitan airports engineers as chief project engineer. He will oversee the $4,000,000 expansion and construction program at Wold-Chamberlain field this summer.

The resignation of **Lyman B. Wilkins,** of Fairchance, Pa., as project engineer in the Uniontown District of the Pennsylvania Highways Department has been announced.

D. L. MacKinnon is managing director of the new Bayside Construction Co., Ltd., at 43 Roseberry St., Campbellton, N. B.

S. V. Shayler, city engineer of Kimberley, B. C., since its incorporation has resigned to open a private surveying business. He is an engineering graduate of the University of British Columbia.

R. F. Shaw has been appointed manager of the engineering division, Foundation Co. of Canada, Ltd., Montreal, Que.

John R. Williams, a consulting engineer of the Washington, D. C., firm of Johnson & Williams, has been named to the city planning commission of Falls Church, Va.

Marvin E. Ray, city engineer of Vancouver, Wash., for the last four years, has been appointed city supervisor at Pullman, Wash.

Ed W. Berg, formerly Washington State supervisor of flood control and reclamation, is the new engineer for Consolidated Diking District No. 1 at Longview, Wash.

Raymond M. Rogers of San Francisco has been named city engineer for Ventura, Calif. He replaces V. M. Capesius, resigned. Rogers received his civil engineering degree from the University of Kansas. He served with the Corps of Engineers during the war as a major. He has been assistant engineer for the Kansas board of health, assistant water department engineer for Wichita, and construction engineer for the Phillips Petroleum Co.

Harry D. Martin, formerly assistant engineer of Whitman County at Colfax, Wash., has been appointed Garfield County engineer at Pomeroy. A graduate of Washington State College, he had been with the state highway department before taking the Whitman County position five years ago.

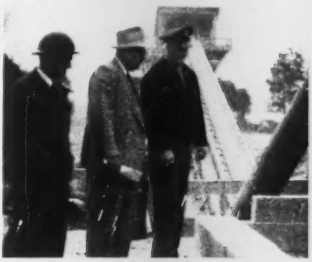
A. G. Hanson, who had been Klickitat County engineer at Goldendale, Wash., for 16 years until his resignation last May, has been appointed Wahkiakum County engineer at Cathlamet, Wash.

Clinton S. Steward has joined The Ralph M. Parsons Co., Los Angeles, Calif., as chief engineer, replacing Elwood Layfield, manager of engineering and construction.

Robt. F. Daniel, formerly geodetic engineer, Army Map Service, Washington, D. C., is now construction engineer for Esso Standard Oil Co. at Baltimore, Md.

Lt. Col. John F. Miles, has been assigned by Col. O. E. Walsh, Portland district engineer, to supervise construction of Detroit Dam, being built by the Corps of Engineers as a unit of the Williamette basin flood control, irrigation, navigation and power project in western Oregon.

R. W. McCall, project manager for the aggregate contractors at Buggs Island Dam in Virginia, has a big job ahead of him—producing 1,600,000 tons of coarse and fine materials by early 1951. All materials are crushed at a granite quary near the damsite. Gorman Bros. and Ralph Mills Co., Salem, Va., are the prime contractors for aggregate.



Inspecting the primary crusher of the elaborate aggregate plant at Clark Hill, multi-million-dollar project on the Savannah River, near Augusta, Ga., are seen, left to right, A. C. Marane, assistant resident engineer, Congressman Prince H. Preston and Col. Paschal N. Strong, district engineer, Corps of Engineers.

At the top of the jumbo, R. F. Parker (left), and C. W. Fiery, resident engineer in charge of tunnel construction for the Norfolk & Western Railway Co., watch drilling operations on the railroad's 7,110-ft. long, double track New Elkhorn Tunnel, near Bluefield, W. Va. Mr. Parker is in charge of the tunnel work for Haley, Chisholm and Morris of Charlottesville.

ENGINEERING SCHOOLS

Earthquake Research

The Pacific Northwest earthquake of April 13 promises to be one of the best documented on record, as the result of plans made by the University of Washington's Engineering Experiment Station at Seattle.

University faculty members will make numerous field trips throughout the 10,000-sq. mi. area of western Washington and Oregon affected by the quake to study damage and geological effects and document thousands of reports. The project, under the direction of Alfred L. Miller, professor of civil engineering, and G. E. Goodspeed, professor of geology, is expected to require about a year for completion.

Engineers, architects, public officials, and building owners throughout the area have been asked to send detailed reports of what happened or did not happen to their buildings.

Findings may lead to important changes in building codes, such as banning the construction of parapets, or providing for improved designs for schools and other public buildings.

This will be the first attempt to make a complete study and pool all engineering and geological information about an earthquake, Miller said. The area affected by the earthquake is ideal for study because there are all types of construction and evidence of the damage is clear.

Other research work

Emergency research to save the Whiting naval air station near Pensacola, Fla., from being washed out to sea is being carried on by engineers in the University of Minnesota's St. Anthony Falls Hydraulic laboratory.

Heavy rains on the eight runways, 6,000 ft. long by 300 ft. wide, have gouged so many deep, mile-long gullies around the plateau on which the field is located that the Navy had been considering the abandonment of the installation. Engineers of the United States Department of Agriculture's soil conservation service, were called on to determine methods of stopping the erosion.

Facing the researchers as they took over the project were these five tough problems in handling the storm water disposal:

Development of methods for joining together two streams of water flowing at supercritical speeds; investigation of why so many dams built in the drainage ditches at Whiting field had failed and how to build structures that would not fail; development of means of conducting the rain water smoothly from the many pipes used to drain the air field to the ditches which carry the water down the sides of the plateau; a study of the structures used to store the flood water temporarily so it can run off slowly; and design for a drainage ditch outlet to prevent the undermining and washing out of the discharge end of the ditches. The engineers are experimenting in diverting the water upward into a spray to dispel its force.

Aluminous cement

Despite its high iron content, ferruginous bauxite and lime or limestone will produce a good aluminous cement which exhibits the strength in 24 hours that is reached by regular Portland cement only after 28 days, according to a thesis just published at the University of Washington.

The researchers, Arthur H. Avery and George L. Hagen, studied the value of high-alumina clays and bauxite in making quick-setting cements. They report that other advantages of aluminous cement over portlands are resistance to salt water and its use in temperatures too low for ordinary cements.

Faculty News

Prof. Robt. L. Lewis, on the faculty of Colorado A. & M. College for 13 years, has been appointed chairman of the department of civil engineering at N. Y. University's college of engineering. Assistant Dean William Remington Bryans at N. Y. U. will retire as professor emeritus this month but will continue to serve in an advisory capacity on a part-time basis during the academic year 1949-50, Dean Thorndike Saville has announced. Dean Bryans has held his present post since 1933 and in addition has been secretary of the faculty since 1930.

Professors Leslie F. Van Hagan and Ray S. Owen, both 1904 graduates of the University of Wisconsin, and long members of the civil engineering faculty, will retire this year. Professor Van Hagan has been chairman of the department since 1939.

Five hundred colleagues, alumni, students and other friends of Dean M. L. Enger of the University of Illinois met recently to see the unveiling in the engineering library of a portrait of the dean painted by Charles E. Bradbury. It is a tribute to Dean Enger's 42 years of continuous service —15 of them as dean of the college of engineering and director of the engineering experiment station.

R. A. Seaton, dean of the school of engineering and director of the engineering experiment station at Kansas State College, will retire July 1. M. A. Durland, assistant dean, has been named his successor. Seaton will remain on the faculty to assist in the $6,000,000 construction program at Kansas State in the next four years.

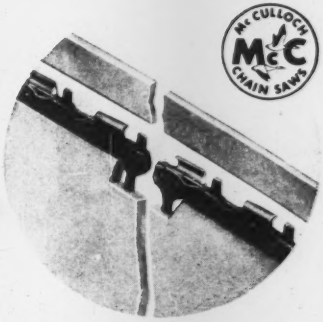
FOR TRAFFIC RESEARCH. In the laboratory of the University of California's institute of transportation and traffic engineering on the Berkeley campus, C. J. Van Til, left, and Fred N. Finn operate a 60,000-lb. testing machine to determine the stability of paving asphalts. The institute, for both undergraduate and graduate students, makes all kinds of research into problems of transportation, including highway economics, vehicle equipment, highway materials, and traffic safety. (Wide World photo)

Here's Why McCULLOCH Saws *start fast... and cut fast*

Conventional magneto, with coil inside flywheel, gives less spark at low speeds.

McCulloch magneto gives hotter spark at low speed. Magnetic lines of force are broken faster, because of higher rim speed at a given cranking rpm.

THESE FEATURES
SAVE TIME
IN LAND CLEARING & CONSTRUCTION JOBS

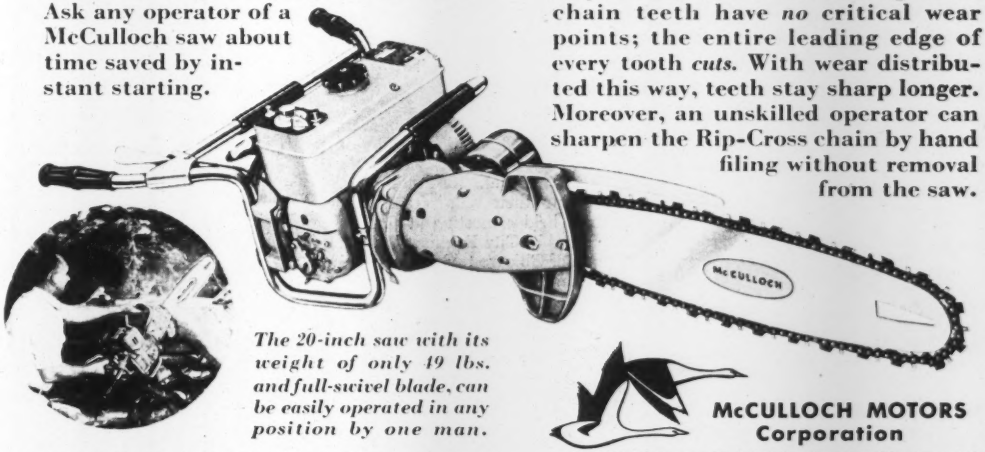


they start fast

The sketch shows how the McCulloch magneto differs from the conventional type. At any given cranking speed, magnetic lines of force are broken faster, giving a hotter spark at low speeds. The hotter spark means faster starting, in theory and in fact. Ask any operator of a McCulloch saw about time saved by instant starting.

they cut fast

The special curved teeth of the McCulloch Rip-Cross chain, driven by 5 honest hp, actually scoop out the wood—with or against the grain or at any angle, in any kind of hard or soft wood. And here's another important time-saver: the Rip-Cross chain teeth have *no* critical wear points; the entire leading edge of every tooth *cuts.* With wear distributed this way, teeth stay sharp longer. Moreover, an unskilled operator can sharpen the Rip-Cross chain by hand filing without removal from the saw.



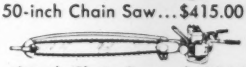
The 20-inch saw with its weight of only 19 lbs. and full-swivel blade, can be easily operated in any position by one man.

6 MODELS AVAILABLE—ALL INTERCHANGEABLE

20-inch Chain Saw...$385.00

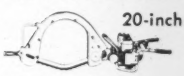
50-inch Chain Saw...$415.00

30-inch Chain Saw...$395.00



60-inch Chain Saw...$425.00

40-inch Chain Saw...$405.00



20-inch Bow Saw $425.00

All prices f. o. b. Los Angeles

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Please send complete information on the 5-hp McCulloch chain saw and name of nearest dealer.

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Firm name_____ Type of work_____

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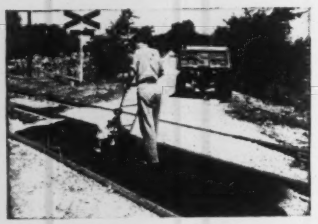
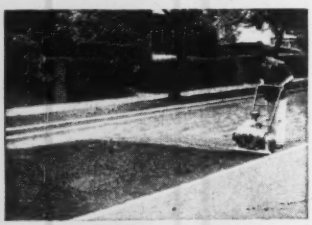
Super-tamps and finishes 60 to 80 sq. ft. per minute to greater density than a 10-ton roller . . .

bituminous or dry concrete pavement patching, mastic or cement-composition floor base, or earth.

Heated plate hits 1750 to 2000 blows per minute of over 700 ft. lbs. each. Puts patches in solidly, sealed, cured and ready for immediate use.



Works where a roller can't — flush to tracks, curbs, manholes, walls, factory interiors, confined spaces.



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Earth-tamping — fast and positively uniform tamping of large areas, ditches, flood walls, etc. Machine will not move until material has been solidly tamped.

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Elections and Activities

A. P. Michaels, of Orlando, has been elected president of the Florida Engineering Society. Other new officers: E. A. Nordstrom, St. Petersburg, first vice-president; Walter H. Beisler, Gainesville, second vice-president; Raymond Chase, Jacksonville, treasurer, and David B. Lee, Jacksonville, secretary.

Lewis B. Smith of Rochester has been elected chairman of the New York Section of the American Water Works Association. Other new officers: Arthur Luce, New York, vice-chairman, and R. K. Blanchard, New York, secretary-treasurer. John G. Copley of Elmira and James Losbee of Tarrytown were elected trustees. The George W. Fuller award, given in recognition of outstanding work in the advancement of water works projects, was presented to Simon P. Carman, Binghamton, N. Y.

Employment for civil engineers is high, and skilled engineers are exceptionally scarce, Brig. Gen. James F. McManmon, Massachusetts commissioner of airport management, recently told members of the American Society of Civil Engineers during a conference of student chapters held at Tufts College.

The West Shore Water Producers Assn. whose membership consists of water works personnel from cities from Michigan City, Ind., to Two Rivers, Wis., taking their water from Lake Michigan, held a meeting at Racine, Wis., May 11. City Engineer W. W. DeBerard of Chicago told research and progress in the use of the electron microscope at water purification plants. James C. Vaughn, filtration engineer of the city of Chicago, was elected president.

Dean David L. Arm of the University of Delaware's school of engineering was elected president of the newly-organized Delaware Engineering Association. C. H. Topping of the E. I. duPont de Nemours Co., vice-president, and Fred T. Bear of the Delaware Power and Light Co., secretary-treasurer. The association represents 500 engineers.

Norval Platt has been elected president of the Broome County Area Chapter of the New York State Society of Professional Engineers. Other officers are: vice-president, J. T. Browne; secretary-treasurer, S. P. Carman; directors, G. E. Dana and R. C. McNamara.

Maurice H. Thatcher, only surviving member of the Isthmian Canal Commission, which supervised building of the Panama Canal, was honored recently by the Panama Canal Society of Washington. Formerly a member of Congress from Kentucky and Governor of the Canal Zone, Thatcher was accorded tribute by the society for his service from 1910 through 1913.

E. O. Bryant is president of the Engineers Club of Western North Carolina. Other officers are: L. Merchant, vice-president; R. G. Fortune, Jr., secretary; Barnett J. Sledge, treasurer, and G. I. Thurmond, M. G. Lyon, Walter Bearden, John P. Dosier and W. W. Dodge, Jr., directors.

F. C. Gilbert of Helena, statistician and supervisor of industrial services with the state unemployment commission and the U. S. employment service for the last 11 years, has been elected president of the Montana Society of Engineers. Other officers: Carl Jordan of Butte, first vice-president, succeeding E. A. Barnard of Anaconda; Paul Jones of Great Falls, second vice-president to succeed Clarence Champ of Butte; R. D. Piper of Butte, reelected secretary, and R. W. Lawson and J. B. Hazen of Butte, trustees for three-year terms, succeeding William Flynn and Carl Davis of Butte. Gilbert is a graduate of M.I.T.

The Engineering Society of Buffalo, N. Y., has elected George R. King, president; Alexander Grabhorn, vice-president; Volney M. Holmes, secretary, and Clarence J. Hayes, treasurer. Directors, Joseph M. Gentile, Robert K. McKeegan, Jr., Henry W. Osborne and Joseph E. Tisdel.

MAJOR MEETINGS

Central States Sewage Works Assn., Hotel Sherman, Chicago, Ill., June 17-18.

American Society of Engineering Education, Rensselaer Polytechnic Institute, Troy, N. Y., June 20-24.

Symposium on Research in Water, Sewage and Industrial Wastes, sponsored by Public Health Service, Dept. of Commerce Auditorium, Washington, D. C., June 23-24.

American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J., June 27-July 1.

American Society of Civil Engineers, Hotel Prado, Mexico City, July 13-15.

Pan American Engineering Congress, Rio de Janeiro, Brazil, July 15-24.

OBITUARY

Willard Pope, 82, principal builder of the famous cantilever bridge across the St. Lawrence River at Quebec, and a Detroit civic leader, died in that city June 2. Mr. Pope was an organizer of the Canadian Bridge Co. of Walkerville, Ont., and was its vice-president and chief engineer until 1921, when he retired. He was a member of the Detroit Rapid Transit Commission from 1923 until 1928. He was graduated from the University of Michigan.

Joseph Philip Fulcher, Sr., 59, civil engineer of Seattle, Wash., died there May 31. He was graduated from Vanderbilt University and fought in the First World War. He was engineer in charge of the Roza irrigation project at Yakima, Wash., in the 1930's, and later a civilian engineer with the Army.

W. Donald Wilfong, 47, superintendent of public works at Hickory, N. C., died May 30.

William G. Maguire, 62, superintendent of Chicago Fabricating Works, Bethlehem Steel Co., died at his home in Chicago on May 23.

Robert L. Glass, 59, engineer and division chief of the United States Patent Office for 21 years, died May 25 in Washington, D. C. He was graduated from the University of Pittsburgh, and entered the service of the Patent Office in 1916 and was made chief of Division 60 in 1928.

Augustine T. Smythe, 54, engineer and retired Army officer, died at Charleston, S. C., May 29. During the 30's he worked for the TVA.

Kenneth P. Howe, Sr., 58, assistant engineer of water supply for the Louisville & Nashville R.R., died at Louisville, Ky., May 27. A veteran of the first world war, he had been with the railroad for 32 years.

Charles R. Goddard, 59, purchasing agent for the White Construction Co., New York City, died at Rahway, N. J., May 20. A veteran of the first world war, he served as a second lieutenant in the construction division of the U. S. Army Air Force in England and France and in the second world war he was chief of the operations division in the office of the district engineer, St. Louis, Mo., engineer district, Corps of Engineers. Between wars he worked for construction companies.

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WHERE valves are installed in inaccessible locations.

WHERE rapid opening or closing of valves is desired.

WHERE numerous valves are to be operated frequently.

WHERE easy opening of extra-large valves is desired.

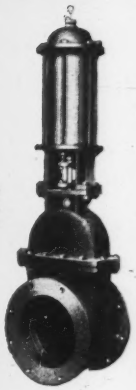

FIG. 611 FTR. Bronze cylinder with Tie-Rods, standard up to 12" diameter.

FIG. 611 F. Cast-Iron, Bronze-Lined Cylinders, standard over 12" diameter.

KENNEDY Hydraulic or Cylinder-Control Gate Valves are available for steam, air, oil or cold water service.

Actuated by water, air or oil under pressure, the valve is controlled by a four-way valve located on any reliable pressure-supply line within reasonable distance from the valve. Piston rod extends through cylinder and indicates position of the discs.

Pressure must be maintained in the cylinder on Hydraulic-Control Gate Valves to hold the closed position, unless valve stem is horizontal or hanging vertically from the disc.

Use the check list below and write for further details and prices of KENNEDY Hydraulic-Control Valves to meet your particular requirements.

CHECK LIST FOR INQUIRIES AND ORDERS

- ☐ Size of valve and whether bronze or cast iron bronze-lined cylinder.
- ☐ Working or test pressure and actual unbalanced pressure on discs.
- ☐ Type connection; flanged, bell ends, or special.
- ☐ Position of valve in pipe line.
- ☐ Dependable pressure available for cylinder operation and whether cold water, air or oil, etc.
- ☐ Brief description of installation, fluid or gas controlled, frequency of operation and function of the valve.

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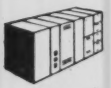
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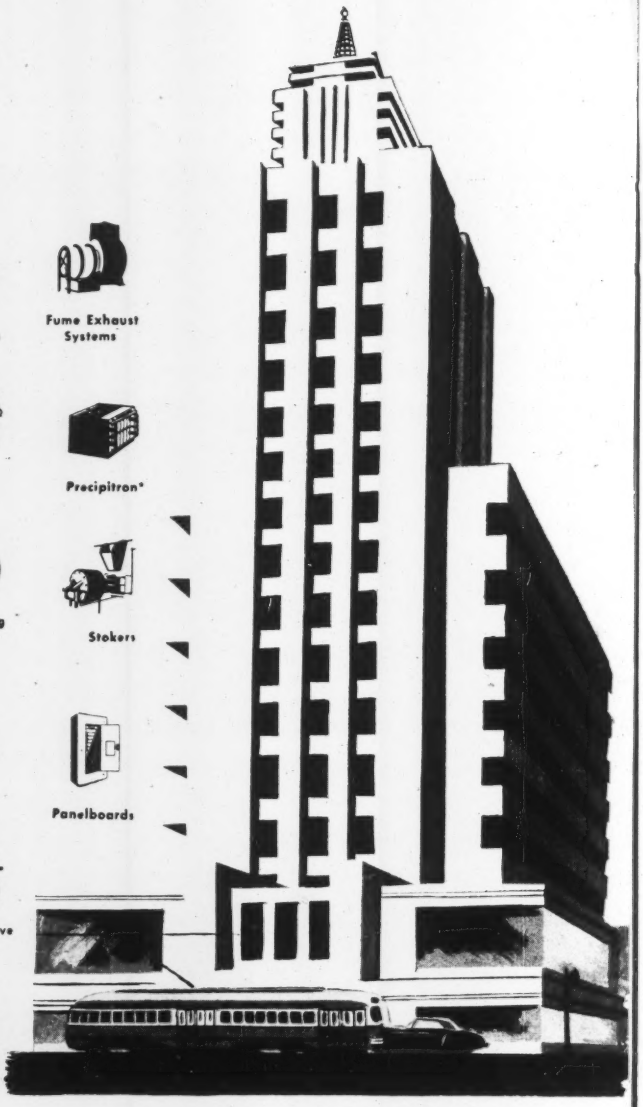

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This 362-page book contains detailed information on Westinghouse products for the construction industry. It was designed to meet the requirements outlined by Architects and Engineers themselves. Industry-wide distribution has already been made. If you do not already have your copy, ask your nearest Westinghouse District Office to send you B-2161-D.

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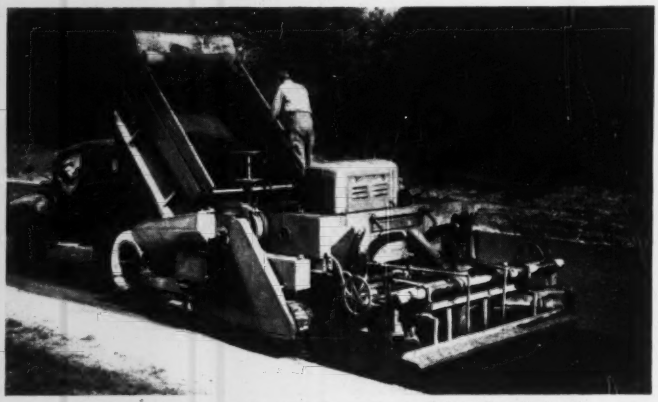


Paver's Width of Spread Is Adjusted by Handwheel

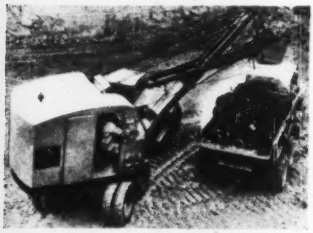
This "BP-5" machine lays any width of paving between 5 ft. 8 in. and 12 ft. 6 in. without removal or insertion of any parts. It can lay 25-ft. pavement in two lanes without special attachments. It is almost instantly adjustable for any width between 9 ft. and 12 ft. 6 in. by merely turning a handwheel and without stopping the machine. Thus, widening for curves and other width changes is accomplished with a great saving of time. Hydraulic device automatically and positively matches level of course being laid with adjacent course, curb, gutter or other grade line, maintaining exactly correct thickness for final compaction by roller. The machine is also able to pave flush to curbs and insures perfectly blended and sealed joints between adjacent lanes. Lays any mat thickness up to 6 in., with precision-smooth surface guaranteed by its long straightedge equalizing runners and automatic, hydraulic leveling pans which hold the rear screeds to level established by the center screed. Big tractor crawlers support all weight except that of the screeds and the long equalizing runners which ride on the base course or sub-grade. Weight of the machine and effect of its traction are never on the material being laid, thus there is no premature sealing of material that requires aeration. The 6-ton hopper insures ample material for continuous operation, as fast as trucks can deliver. Dual conveyors, independently and closely controlled through hydraulic clutches, carry material from hopper to screeds. An agitator-distributor breaks up, refluffs and spreads the material evenly across center screed width. Material channels at both sides provide material for the rear screeds. Screeds are heated by hot air, making them burnproof—and have hydraulic lifting devices—JAEGER MACHINE CO., COLUMBUS 16, OHIO.

Extra Long Concrete Piles

A method has been developed for installing Button Bottom piles to a depth of 110 ft. or more, using rigs with 90-ft. leads. This preserves the mobility of equipment and gives the owner these advantages inherent in piles of yarn. Bearing on a large point (227 sq. in. compared with 90 sq. in. for the usual 10 ¾-in. pipe composite type pile); the 12-in. dia. shaft, for the full length, keeps column strength high to develop end-bearing value of the pile in the good stratum; cylindrical casing does not indicate false bearing value in weak upper strata. Precast Button Bottom, followed by steel casing, is driven into bearing stratum. Corrugated steel shell is then lowered undamaged inside protective driving casing. Shell is filled with concrete and casing withdrawn, allowing compressed soil to expand and grip pile shaft.—WESTERN FOUNDATION CORP., 2 PARK AVE., NEW YORK 16, N. Y.

Protective Sleeves

Spirally interlocking strips of tough Tenite plastic form protective sleeves for existing power lines. No special tools are required for installation, and quantities of the strips can be handled conveniently by a single linesman. To install, the ends of both strips are applied around the wire and the two lengths are spiralled together. In place, they form a tubular sleeve, which is flexible and lightweight, and provides protection against abrasion by trees and other obstructions. Tenite has excellent weathering ability and impact resistance, and its dielectric strength affords insulation.—PREFORMED LINE PRODUCTS CO., 1051 POWER AVE., CLEVELAND 14, OHIO.

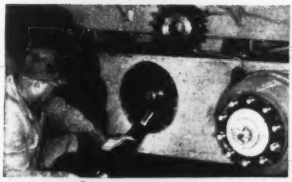


Six Machines In One

An improved BANTAM, the Model M-49, is announced. This truck-mounted unit combines six machines in one with interchangeable booms and buckets, and is easily converted from shovel to trench hoe, dragline, clam, piledriver, or crane. It mounts on any 1½-ton truck chassis or larger and is also available on half-tracks. Engineering features include Timken tapered roller bearings mounting of jack, drum, and swing shafts. Drums, swing gears, and vertical swing shaft roll on pre-lubricated, sealed-for-life ball bearings. Sealed-in triple roller chain drive runs in oil bath. All gears and pinions are machine cut, and parts subject to extreme wear are flame hardened. Internal expanding mechanical clutches are used on both swing and drum shafts. Improved hook roller design incorporates 3 larger adjustable cam-type hook rollers, and redesigned turntable rollers have larger axles and bushings. Machine-cut bull gear is bolted in place and may be rotated if necessary to distribute wear.—SCHIELD BANTAM CO., INC., WAVERLY, IOWA.

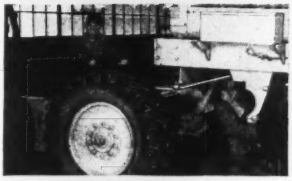
Ornamental Glass Block

Machine-made, yet having the appearance and characteristics of a hand-finished product, is the new "Random Clear" Insulux glass block. A non-geometric face design gives the cool, sparkling appearance of ice. The glass itself is crystal-clear and transparent but irregularities in the contours of the block faces create image variations. Although the new block is actually manufactured by precision methods, a random effect has been achieved by using several slightly dissimilar molds to form the two halves of the block, and then using different combinations of halves. As a result, it is possible to build panels of nearly one-hundred "Random Clear" glass blocks in which no two block faces are identical.—AMERICAN STRUCTURAL PRODUCTS CO., TOLEDO 1, OHIO.

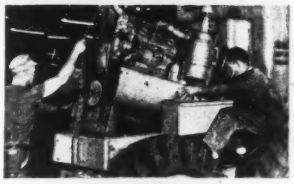


REAR AXLE REPLACED BY 1 MAN IN FROM 2 TO 4 HOURS

CLUTCH OVERHAUL REQUIRES 1 MAN 4 HOURS OR LESS



TRANS-MISSION REMOVED BY 2 MEN IN 2½ HOURS OR LESS



ENGINE REMOVED BY 2 MEN IN 3 HOURS OR LESS

Adams Motor Graders

DESIGNED BETTER FOR FAST SERVICING

Fewer hours in the shop—more hours on the job . . . that's what the fast, easy-servicing features of Adams Motor Graders mean to owners. Note in the accompanying photographs how usually difficult major repairs are accomplished in minimum time, with minimum effort.

BUILT STRONGER FOR TOUGH WORK

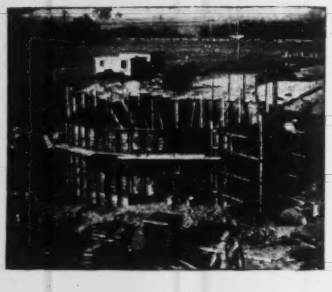
On the job, owners quickly discover that Adams Motor Graders have abundant power, strength and stamina—plenty of everything it takes for handling roughest, toughest work . . . for punching shale out of hillsides—making heavy ditch and bank cuts—scarifying hard surface material—bucking through deep snow drifts, etc.

Let your near-by dealer show you how Adams Motor Graders save you time and money—*on the job and in the shop.*

J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS, INDIANA

Make your next motor grader an Adams

Another Job Showing the ADAPTABILITY of ECONOMY STEEL FORMS



Use this nationwide Form Rental and Engineering Service that saves costly Labor — Material — Time when placing concrete for

- Foundations and Walls
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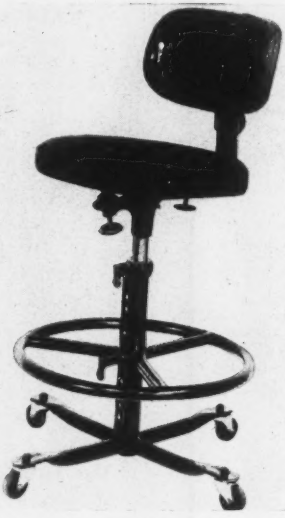
Portable Pipe Threader

This 26-lb. power threader is operated by any ¼-in. standard electric drill. It threads 1 in., 1¼-in., 1½-in., or 2-in. pipe with one set of high speed steel chasers. Furnished with one set of chasers and drive adapters.—Armstrong Bros. Tool Co., 5200 W. Armstrong Ave., Chicago 30, Ill.

All Metal Slide Rule

The Pickett metal slide rule offers these four outstanding advantages—accuracy, durability, freedom from distortion, and ease of manipulation. The materials used—magnesium alloy, lucite and aluminum—will not warp, twist or corrode. Parts are precision made to a tolerance of 0.001 in. Markings are accurate to 1 micron or less. Three coats of clear plastic finish cover the scales, so that they are permanent and washable. There are several different models, including a light, convenient pocket rule for basic engineering computations. — Central Scientific Co., 1700 Irving Park Road, Chicago 13, Ill.

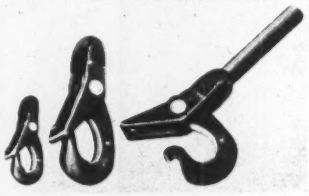


Draftsman's Chair

Here is a chair that is completely adjustable without tools. The height can be raised from 23¼ in. to 32¼ in. The footrest is independently adjustable in height. The seat is provided with a forward-tilting mechanism which may be adapted to the degree of tilt and for the weight of the user. Casters enable the draftsman to roll the chair freely from one end of the drawing board to the other, reducing fatigue and increasing production.—Cramer Posture Chair Co. Inc., Kansas City, Mo.

Refueling Tractors

Using the suction of the pistons to create a vacuum in the fuel tank, Fill-a-Matic refueler fills the tank quickly with strained fuel and shuts off automatically when tank is full. It is simple to install on any tractor and affords all the convenience of a regular filling station pump. It is safe because the fuel enters the tank through a sealed, air-tight connection, thus eliminating fire hazard from overfilling or spilling.—The Fill-a-Matic Co., 817 W. Market St., Louisville 2, Ky.



Safety Hooks

The new BTC safety hooks are drop forged for maximum strength and reliability. Automatic mousing action with a safety-tie lip lock holds the point of the hook and prevents the sling from slipping off. This tie also adds to the strength of the hook. The safety-tie mousing automatically engages as the load is applied and disengages when released. This feature eliminates the faults of common cargo hooks, such as hook point straightening out, snagging of hook on ledges, and load slipping or jumping off the hook. Another important factor is that the patented shoulder and lip-lock construction of the safety tie gives a wide margin of safety. The pin can be sheared without affecting the load-holding capacity of the hook. All bearing surfaces are machined for accuracy, and the action is simple and positive.—Brewer-Titchener Corp., Cortland, N. Y.

Travel-Mix Plant

A highly efficient new mixing chamber combined with carefully engineered details are features of this new one-pass traveling mixer. Its capacity is 600 to 750 tons per hr. for emulsion or cement stabilization and bituminous road mix, and for soil blending 1,000 cu. yd. per hr. Self-powered and with complete hydraulic one-man control it can be fitted to purchaser's tow-tractor or is offered with a tractor of its own. Positive control of all ingredients, with easily read dials, assures accurate proportioning. — Gardner-Byrne Construction Co., Inc., 649 S. Olive St., Los Angeles 14, Calif.

Manufacturers' Publications

Pole Hole Digger—Circular tells how you can drill holes with your regular line truck and crew and the Tel-E-Lect pole hole digger. The operator simply lowers the digger to the ground by use of the winch line and then engages the power take-off shaft leading to the digger. This starts the boring operation, and as soon as the auger has a good start, the winch line can be left to "free spool." The ground man steadies the auger by use of the hand guide and can also control the angle at which he wishes the auger to dig. The auger is removed from the hole by use of the winch line and the dirt is thrown off by spinning the auger above the ground. — TEL-E-LECT PRODUCTS, INC., 9601 MINNETONKA BLVD., MINNEAPOLIS 16, MINN.

Plywood Cutting Chart—A 1-sheet chart is a plywood cutting calculator. By the use of this chart plywood purchasers ought to save a lot of office work and effect economies by using smaller panels in some cases.—DAVIS PLYWOOD CORP., 12,555 BEREA ROAD, CLEVELAND 11, OHIO.

Expanded Metal—New 8-page bulletin gives engineering data including load deflection, air flow comparison, and free openings of both standard and flattened mesh types of expanded steel. Also included is a list of sizes with dimensions and weights, illustrations of mesh and typical applications, and data on expanded metal grating.—JOSEPH T. RYERSON & SON, INC., BOX 8000-A, CHICAGO 80, ILL.

Cold Storage Doors—A 12-page catalog on cold storage doors covers doors for moderately low temperatures, for zero and sub-zero use, and for special cold storage purposes. Cuts and diagrams show details of construction on all standard models, specification tables are given for inside frame door dimensions and size of wall opening required.—JAMISON COLD STORAGE DOOR CO., HAGERSTOWN, MD.

Wire Rope Slings—A bulletin describes flat-laced wire rope slings, with illustrations of many actual installations in a wide field of operation, and of loads in various sizes, shapes and weights.—A. LESCHEN & SONS ROPE CO., 5909 KENNERLY AVE., ST LOUIS 12, MO.

here's news!
CONSTRUCTION COSTS GOING DOWN!
AMAZING DRIVE-IT TOOL SAVES HOURS AND DOLLARS ON COMMON FASTENING JOBS!
You ring up dollars of savings and
Over 40 different sizes and types of unthreaded studpins available
Extra Profits in the Palm of your Hand!
for Instance..
NO DRILLING!
PARTITIONS AND FIXED EQUIPMENT. It's easy work setting a studpin every 30 seconds.
NO OUTSIDE POWER!
AIR CONDITIONING AND HEATING DUCTS. One studpin holds 2000-3000 pounds direct pull.
TRIPLE SAFE!
ELECTRICAL CONDUITS. You'll save a dollar for every junction box fastened by DRIVE-IT.

It's headline news! DRIVE-IT saves *money* by saving *time* . . . hours, days and even *weeks* on big jobs. DRIVE-IT sets studpins in steel, concrete or wood . . . "nails" them to these materials with a *12-ton* punch! A small power charge provides the "muscle" . . . and does it *with perfect safety.*

Over 40 different sizes and types of threaded and unthreaded studpins available . . . plus a choice of charges for "controlled power" on the job.

You ring up dollars of savings and spare your workers needless fatigue by fastening with DRIVE-IT. It is the *original* powder-powered construction tool especially developed for concrete fastening work.

Write today for the whole amazing story!

POWDER-POWER TOOL CORPORATION
0703 S. W. Woods St. Portland 1, Oregon

When You Order Ropes for Scrapers

TAILORED TO STAY WITH ANY WHEELED SCRAPER LONGER IN TOUGH GOING

Take a Look at These Tuffy Scraper Rope Field Performance Records

Operator of 4 wheel scrapers changed two of them over to Tuffys. Chief mechanic's record showed drum crushing made it necessary to cut a competitive rope 11 times while Tuffy needed to be cut only 4 times. Tuffy gave 33⅓% more service and became standard equipment on all rigs.

Tuffy Scraper Ropes are proving to be really 'Tuffy' up in this part of the country (Nebraska). They wear out instead of breaking up. Ship two more 300 ft. reels of Tuffy.

On April 1st, 1948, I placed two rolls of Union Rope on our scraper No. 3, and at the same time placed two rolls of another make of rope on scraper No. 1. Both worked about the same number of hours and performed about the same amount of work during the past working season. Scraper No. 1 had to be rewired whereas scraper No. 3 has about ⅔ roll of the new type (Tuffy) rope still on it.

UNION WIRE ROPE CORP

union Wire Rope

Specify Tuffy Trade Mark Scraper Rope

DESIGNED TO PICK UP AND LAY DOWN MORE LOADS OF "PAY DIRT"

Harnessing the power of a traction unit to the mechanical operation of a towed wheel scraper subjects wire rope to varied and severe abuses. For more than ten years, Union Wire Rope Engineers have made exhaustive field studies leading to the design of the new Tuffy rope construction for wheel scrapers tough enough to stand up longer under:

• Greater drum crushing abuse. • Sharper bends over smaller sheaves. • Angle pulls through swivel mounted sheaves. • Crawling on flanges of guide rolls and edges of sheave housing. • Multiplied impact shock of load on slack lines.

Changeovers to Tuffy Scraper Rope by operators of all makes of wheel scrapers have steadily mounted. Use on one scraper leads to changing over the whole fleet. This, and the regularity of repeat orders, is strong testimony of the extra yardage handling ability of Tuffy Scraper Rope.

For Longer Runs and Lower Cost Mount Tuffy Reels on Your Scrapers

Tuffy scraper rope is wound on special built reels with countersunk bolt ends. This eliminates hazards to the safety of operators. Reels are readily mounted on reel carriers. They hold up to 600 ft. of ½-inch, 500 ft. of 9/16-inch, with the Tuffy rope wrapped in waterproofing. No complicated specifications are necessary. In ordering from your Union Wire Rope distributor, simply say—

Tuffy Scraper Rope

_____ Reels _____ Feet
How Many Length

_____ inch in diameter

That is all it takes to bring you new scraper rope yardage records. Tuffy is Union-formed (pre-formed). It has the flexibility to withstand more bending over small sheaves, yet the stiffness to resist looping and kinking when slack; and on the crown of each strand, less length of wire is exposed to be torn or crushed out of shape. Specify Tuffy by the full reel—save re-threading time.

UNION WIRE ROPE CORPORATION

2228 Manchester Ave. **Kansas City, Mo.**

☐ Send New Folder on Tuffy Scraper Rope.

For Tuffy Scraper Rope—See Your Union Wire Rope Distributor (Listed in Yellow Section of Your Phone Directory) and/or send this coupon.

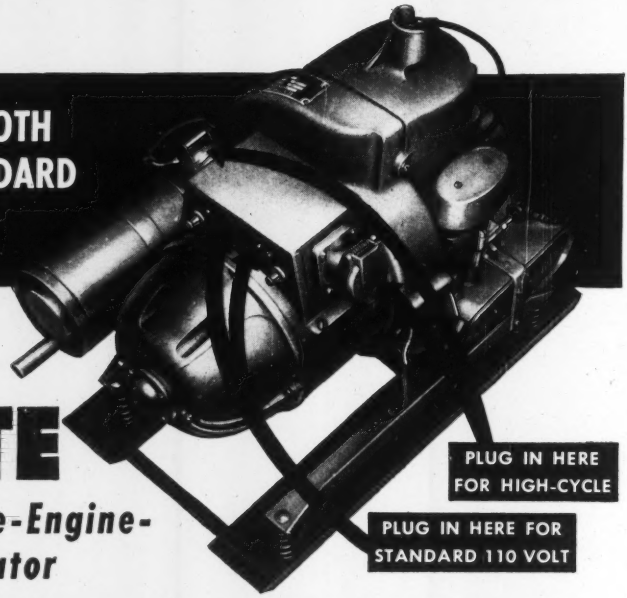
Firm Name_____

Address_____

City_____ Zone_____

State_____

YOU CAN OPERATE BOTH HIGH CYCLE AND STANDARD 110 VOLT TOOLS



with this

HOMELITE

Carryable Gasoline-Engine-Driven Generator

...A WIDE-OPEN FIELD FOR GREATER SAVINGS

HOMELITE PAVING BREAKER

HOMELITE CHAIN SAW

Because they do more work and weigh less . . . because maintenance costs are cut in half . . . high-cycle tools are being used on more and more construction jobs . . . concrete vibrators, grinders, impact wrenches, chain saws, electric paving breakers and an ever-increasing number of others. They are indeed the last word in greater efficiency.

And here is Homelite's answer to those who want to cash in on the advantages of high cycle tool operation. It's a compact gasoline-engine-driven dual-purpose generator . . . the first and only one of its kind . . . a complete power unit you can pick up and carry to operate your high cycle tools *any place you want.*

NO LOSS ON PAST INVESTMENTS

Even though you have made substantial investments in standard 110 volt tools, you have nothing to lose. For this Homelite Generator operates *both* high cycle and standard universal tools with equal efficiency.

Look into this new Homelite Dual Purpose Generator...the Carryable Power Plant of the Future. Send for bulletin...or, better...let us give you a free on-the-job demonstration. Write, today.

HOMELITE CORPORATION

CARRYABLE PUMPS • GENERATORS • BLOWERS

1106 RIVERDALE AVENUE, PORT CHESTER, NEW YORK

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

June 21

N. J., Vineland—Bd. Boro Comrs., Comrs. Chambers, Municipal Bldg., constructing Contr. 8, well house, appurtenances. Contr. 9, well and well pumps, about 200 ft. east of intersection of East and Michigan Ave. Plans deposit $25. Havens & Emerson, 233 Broadway, New York, 7, N. Y., consult. engrs.

N. C., Hickory—City, H. L. Burdett, mgr., City Hall, waterline extens., 48,722 in. ft. 6 and 8 in. c.i. watermains, one hundred fifty-five 6 in. valves and valve boxes, twenty-eight 8 in. valves and valve boxes, etc., 67 fire hydrants. Plans deposit $15. Abernethy & Scott, Hickory, engrs. CD 2/24/44—ENR 3/9/44.

Wis., Milwaukee—City, furnishing, installing chlorination equip. in water purfication plant, $36,000. Plans deposit $10. J. P. Schwada, city engr.

CONTRACTS AWARDED

●**S. C., Rock Hill**—City, C. H. Albright, mayor, Rock Hill, filtration plant; to C. M. Guest & Sons, Anderson, **$544,928*****waterlines to Kahn & Jackson, Lady St., Columbia, **$320,545***** water tank, to R. D. Cole Mfg. Co., Newnan, Ga., **$137,200**. Grand total $1,002,673. Bids 5/4. CD 5/10—ENR 5/12, under LB.

Que., St. Anne de Beaupre—Municipality, rein.-con. reservoir, to Dominion Logging & Const. Co. Ltd., Everell, **$50,000**. G. Piette, 13 d' Aguillon St., Quebec City, engr.

SEWERS, WASTE DISPOSAL

BIDS ASKED

June 21

●**Conn., Fairfield**—Town, Eugene L. Lehr, engr., Town Hall, sewerage sys., test boring various sections of town, sanitary sewer mains to determine conditions at proposed location sewage plant, outfall sewers and trunk lines, $2,500,000. Bowe, Albertson & Assoc., 110 William St., New York, N. Y., engrs. CD 1/9/47—ENR 1/23/47.

June 29

N. J., Camden—Purchasing Bd., at office of Mayor, City Hall, site fill for Baldwins Run Sewage Treatment Plant, Thirty Second St. and Farragut Ave. along New Jersey Channel of Delaware River. Contr. 2. Plans deposit $10. Havens & Emerson, Woolworth Bldg., 233 Broadway, New York, 7, N. Y., consult. engrs. CD 8/13/47—ENR 8/28/47.

LOW BIDDERS

Calif., Los Angeles—City, Dpt. P. Wks., 153 City Hall, June 1, 200 ft. rein.-con. stack for filter drier bldg., inner shell lined with acid proof brick, 75 ft. high, lightning proof. Hyperion Activated Sludge Plant, El Segundo, from Peter Kiewit, Sons Co., Fred J. Erly Jr., 345 Kidways, Arcadia, **$231,098**, Est. $200,000. CD 5/12—ENR 5/19.

Ill., Springfield—State of Illinois, Springfield, May 24, sanitary and flood relief sewers at Illinois State Fair Grounds, from Jones & Krueger, 1021 S. Grand Ave., **$70,463**. CD 5/17—ENR 5/19.

Md., Baltimore—Mayor and City Council, City Hall, storm water sewers, Contr. 246, from Marcus Constr. Co., 231 S. Greene St., **$54,001**. John J. Hunt, 312 Municipal Bldg., sewerage engr.

Minn., Columbia Heights—Village, P. T. Olsson, city engr., Village Hall, May 31, furnish, install sanitary sewers, from Orfel & Mariani, 1744 Sheridan Ave., St. Paul, **$220,830**. CD 5/25.

N. C., Southern Pines—Town, C. N. Page, mayor, Southern Pines, May 26, sewage treatment plant extens., from Southern Builders, Inc., Box 1016, Fayetteville, **$63,723**. CD 5/10—ENR 5/12.

Ore., Beavertown—City, City Hall, sewage treatment plant and 2 pump stations, from Jacobson & Brittan, 6445 S. W. Porter St., Portland, **$95,527**; sanitary and storm sewers, house connections, from Salem Sand & Gravel Co., Salem, **$237,852**. CD 5/24—ENR 5/26.

CONTRACTS AWARDED

Ont., London—City, Dundas St., West End Sewage Disposal Plant extens., own forces. Approx. **$150,000**. R. W. Garrett, c/o owner, engr. CD 9/5/44—ENR 9/21/44.

Que., St. Cyrille de Wentover—Province of Quebec, Quebec City, drainage works, to E. Gagnon, 7 Blvd. Bernard, Drummondville. Approx. **$50,000**. A. Dube, Dpt. Agriculture, Quebec City, engr.

BRIDGES

BIDS ASKED

June 24

Mont., Chester—Liberty Co., Courthouse, 288 ft. span 3-hinged braced chain suspension bridge across Marias River near the Pugsley Ranch. Plans deposit $10. R. T. Hurdle & Son, Box 914, Billings, civil engrs.

June 25

Ont., Granton—Banshard Twp., C. A. Barnett, clk. R. R. 1, 75 skewed concrete rigid frame bridge 20 ft. roadway, approach fill and channel excav., 40 ft. rigid frame bridge, 20 ft. roadway, fill and channel excav. Approx. $95,000. C. C. Parker, 63 John St. S., Hamilton, engr.

Bids Asked

Ont., Muncey—Fred Hall, Indian Supt., Muncey, 3 span continuous frame, rein.-con. bridge over Bear Creek, Caradoc Indian Agency, for Dpt. Mines & Resources, Ottawa, Ont. Approx. $125,000. R. C. Dunn, 105 King St., London, engr.

LOW BIDDERS

California—State Div. Hys., Sacramento, June 1, rein.-con. girder bridge, plant mix untreated rock surf., 12 mi. roadway across St. Johns River about 4 mi. northerly of Visalia, Tulare Co., from Anderson Co., Box 101, Visalia, **$148,363**; repairing 9 piers of existing bridge across Yuba River, on D St., Marysville, Yuba Co., from Underground Constr. Co., 75 Ave. and San Leandro Blvd., Oakland, **$97,515**. CD 5/9—ENR 5/12.

Massachusetts—Mystic River Bridge Auth., 6 Beacon St., Boston, Zone 8, May 31, approach facilities, Chelsea approach, Mystic River Bridge, Charlestown, and Chelsea, Contr. XI, from A. V. Taurasi Co., Inc., 40 Court St., Boston, **$150,776**. CD 5/10—ENR 5/12.

CONTRACTS AWARDED

●**Ohio**—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15, 8.063 mi. Type T-71, Bridge No. DE-3-69, S. R. 3, Genoa and Berkshire Twps., Delaware Co., to Launder & Sons, Inc., Sta. E. Box 6, Toledo, **$1,039,151**.

Wash., Seattle—Port of Seattle, Bell St. Terminal, 500 ft. steel viaduct with rein.-con. approaches and piling fdns., Emerson St. westerly from 15 Ave. W. to Salmon Bay Terminal, to Henrik Valve Constr. Co., 407 3 Ave. W., **$168,533**. Est. $175,000. Bids 6/1. CD 5/25.

STREETS AND ROADS

BIDS ASKED

June 21

♦**Illinois**—U. S. Eng., 826 U. S. Courthouse & Custom House, 114 Market St., St. Louis 1, Mo., road surf. on levees, Proj. Item IV-B (1) Stringtown-Fort Chartres & Ivy Landing Drainage and Levee Dists., Randolph Co., on west bank of Prairie Du Rocher Creek, incl. 17,500 sq. yd. crushed stone or gravel for road surf. atop levee; 200 cu. yd. addnl. crushed stone or gravel for filling depression occurring in surfacing after original placement.

June 27

♦**New Mexico**—U. S. Eng. P. O. Box 1538, Albuquerque, surf. roads, Conchas Dam and Reservoir Proj., Conchas Dam, Serial No. Eng-29-005-49-104. CD 5/25—ENR 6/2.

June 28

Minn., Chaska—Carver Co., W. Schimelpfenig, aud., Chaska, grav. 2.8 mi., incl. 59,-195 cu. yd. excav., 3,010 cu. yd. grav. wearing course in place, S. P. 10-506-01 (SAR 6), Minn., Proj. S 96 (4); grav. 21. mi., 96,066 cu. yd. excav., and 2,236 cu. yd. grav. wearing course in place, S. P. 10-508-02 (SAR 2), Minn., Proj. S 411 (1), $50,000. C. D. Gibson, co. hy. engr.

Tex., Pasadena—City, City Hall, rein.-con. paving various streets and flexible base topping. $70,000. George H. Smith, c/o owner, engr. CD 9/22—ENR 10/14.

June 29

Minn., Rochester—Olmsted Co., Rochester, Frances L. Underleak, aud., crushed rock wearing course 3.7 mi. between State Aid Rd. 9, 3 mi. north of Dover and Little Valley incl. 104,194 cu. yd. Class A excav., 6,784 cu. yd. Class B excav. and 4,826 cu. yd. crushed rock wearing course in place, S. P. 55-508-02 (SAR 10), Minn., Proj. S 685 (3), $50,000. G. J. Sullivan, co. hy. engr.

LOW BIDDERS

California—State Div. Hys., Sacramento, June 1, bit. surf. tr. wid'n, 2 rein.-con. girder bridges 3.7 mi., between Cherokee Canal and Pennington Rd., Butte Co., from W. H. O'Hair Co., Box 278, Colusa, **$103,597**. CD 5/9—ENR 5/19.

Ill., Chicago—City, City Hall, May 26, paving W. 18 St. from S. Blue Island to South Canal; from Standard Paving Co., 30 S. LaSalle St., Zone 2, **$582,066**. CD 5/16—ENR 5/19.

Md., Baltimore—Mayor and City Council, City Hall, June 1, c. conc. streets, Contr. 987, from P. Reddington & Sons, 2 E. Lexington St., **$58,824**. CD 5/26.

Ohio—State Hy. Dpt., T. J. Kauer, Dir., Columbus, Zone 15, rejected bids May 24, Type T-35, 1.355 mi. S. R. 618, Belpre Twp. and village of Bellpie, Washington Co., **$54,900**; cancelled bids to have been opened May 24, Type T-35, 4.898 mi., S. R. 7, Addison, Cheshire and Salisbury Twps., Gallia and Meigs Counties, **$116,600**. CD 5/11—ENR 5/19.

●**Pennsylvania**—State Hy. Dpt., Harrisburg, June 3, c. conc. paving, incl. 1 rein.-con. structure, bit. 18,413 ft. L. R. 361 (4). T. R. 115, from point 2.1 mi. from Pikes Creek to point 1.5 mi. northwest of Dallas Boro, Luzerne Co., from Ryan Bros., Inc., Clearfield, **$507,028** ***bit. surf. 19,431 ft. L. R. 21 (1B), T. R. 15, between Liberty and Blossburg, Tioga Co., from Middlecreek Constr. Co., Middleburg, **$134,082*****bit. surf. 40,101 ft. L. R. 443, Sec. 12, T. R. U. S. 22, from Berks-Lehigh Co. line easterly to point in village of Chapmans, Lehigh Co. and bit surf. 32,722 ft. L. R. 141, Sect. 9, T. R. U. S. 22, between Bethel and Strausstown, Berks Co. from Collins & Maxwell, Inc., Easton, **$244,236** and **$183,134** respectively***bit. surf. 23,696 ft. Appl. 2212, Sect. 1, 2213, Sect. 1, T. R. 897 from Lebanon City line, southeast Lebanon Co., from Ralph V. Daniels, Camp Hill, **$91,941***** bit. surf. 22,829 ft. L. R. 04007, Sect. 5; L. R. 04044, Sect. 3, T. R. 551, from intersection of L. R. 204 easterly to point 0.5 mi. from Mayfield Boro, Beaver Co., from H. R. Allen, Beaver, **$177,082*****bit. surf. left and right of existing pavement, 21,353 ft. L. R. 319 (R-10) T. R. 156, southwest of Shelocta Boro, Armstrong and Indiana Counties, from Mayer Bros. Constr. Co., 1225 W. 18 St., Erie, **$162,610** ***bit. surf. 21,632 ft. L. R. 181 (4), T. R. U. S. 3 from Ruffsdale west beyond Mendon, Westmoreland Co., from Rothey Bros., Inc., Elizabeth, **$211,086**. CD 5/26; CD 5/16—ENR 5/19; CD 5/11—ENR 5/19.

Pa., Phila.—Dpt. P. Wks., City Hall Annex, from General Asphalt Paving Co., 6851 Rising Sun Ave., paving various locations, Schedule F, **$82,958*****from Eastern Asphalt Co., Packard Bldg., Schedule D-1, **$60,111**; Schedule H and H1, **$52,721**; Schedule J2 and B2, **$55,557**; Schedules D2, J3, B4, B3, **$95,191**; Schedule B6 and J1, **$53,594*****from James D. Morrissey, Inc., 3119 Frankford Ave., Schedule C-2, **$64,757**. Dudley T. Corning, hys. chief. CD 10/30/44—ENR 11/16/44.

CONTRACTS AWARDED

Iowa—State Hy. Dpt., Ames, paving, 16.53 mi. F 164 (4), Adair and Cass Counties, to Booth & Olson, Inc., 529 Insurance Exchange Bldg., Sioux City, **$809,482**; pavement, wid'n., resurf. 13.212 mi. F. 64 (6), Jasper Co., to Hargrave Constr. Co., 2424 Bever St. S. E., Cedar Rapids, **$545,989**. Bids 5/24. CD 6/1—ENR 6/5, under LB.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $25,000; other public works $50,000; industrial buildings $68,-000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	

Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

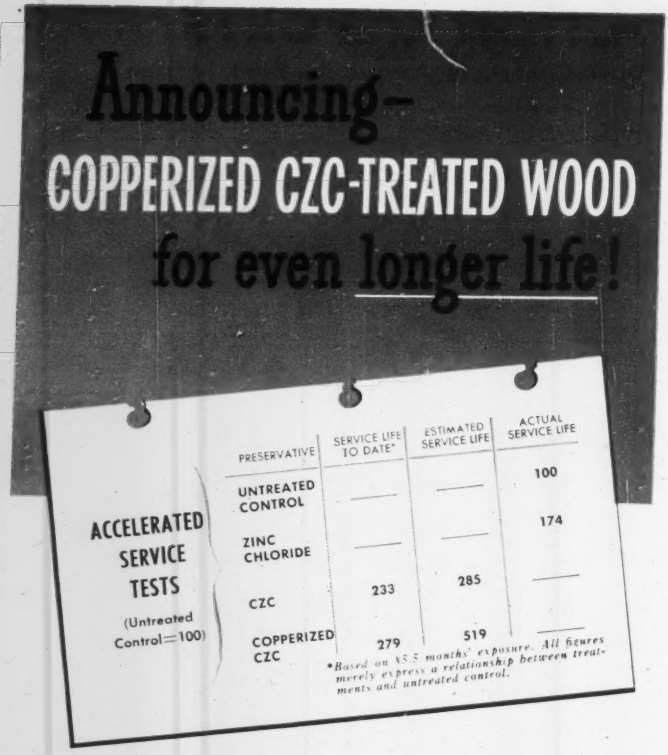
LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published of the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

♦	Federal Government
●	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily



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KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

Kan., Topeka — City, street repairs, to Douglas Constr. Co., 510 E. 15 St., **$114,810.** W. E. Baldry, city engr. CD 11/16/44—ENR 11/30/44.

Mo., Kansas City—Bd. Park Comrs., J. V. Lewis, supt., City Hall, b. conc. resurf., various boulevards of park system, to American Paving & Constr. Co., 8600 Wayne Ave., Kansas City, Mo., **$98,079.** CD 11/10/47—ENR 11/27/47.

North Dakota—State Hy. Dpt., Bsmarck, rejected bids May 20, b. conc. 8.364 mi. State Hy. 5 from Cavalier to Hamilton, F-366 (6), Pembina Co. LB. **$233,952.** CD 5/25—ENR 6/2, under LB.

●Ohio—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15, bit. 22.5 mi. Proposals 1 to 4 inclusive, Adams and Highland Counties to Gracco Roadway & Constr. Co., 3569 Vista Ave., Cincinnati, **$72,785*****1.877 mi. S. R. 7, Type T-35, Belmont Co. and Part 1, 6.039 mi. Village of Bloomfield and Wayne and Cross Check Twps., Part 2, 0.536 mi. city of Steubenville, Part 3, 2.024 mi. City of Toronto and Knox Twp., U. S. R. 22, S. R. 7, Jefferson Co., to Tri State Asphalt Corp., S. Broadway, Martins Ferry, **$51,981** and **$228,861** respectively***9.164 mi. S. R. 14, Fairfield and Unity Twps., Bridge CO 14-121, Columbiana Co. to The Kelley & Meyer Co., 707 Dollar Bank Bldg., Youngstown, **$367,239.**

bit. 15.62 mi. Proposals 1 to 4 inclusive, Darke and Mercer Counties, to A. W. Burns Constr. Co., 424 Woodland Ave., Columbus, **$54,729*****7.757 mi. Type T-35, S. R. 264 and S. R. 268, Miami and Green Twps., Hamilton Co., to Scully Bros., 405 Atlas Bank Bldg., Cincinnati, **$81,431*****1.901 mi. Type T-35, S. R. 120, Lucas Co. and 3.431 mi. Type T-35, U. S. R. 20, village of Woodville and Woodville Twp., Sandusky Co., to S. E. Johnson Co., P. O. Box 29, Maumee, **$89,999** and **$90,926** respectively***Part 1, 7.727 mi. Type B-11, Madison, Adams and Salem Twps., Part 2, 5.21 mi. Type B-11, Highland and Adams Twps., S. R. 208 and 209, Muskingum and Guernsey Counties and 0.531 mi. Type 35, village of Utica, Morgan Twp., S. R. 13, Knox and Licking Counties to W. P. McCarren Co., Walhonding, **$55,074** and **$68,941** respectively.

4.308 mi. Type T-35, Paris Twp., S. R. 5, Portage Co. to The McCourt Constr. Co., 720 Home Ave., Akron, **$129,982*****1.581 mi. Type T-35, U. S. R. 23, Washington Twp., Lucas Co., to Arthur S. Langenderfer, Inc., 4690 W. Bancroft St., Toledo, **$50,473*****bit. tr. 19.04 mi. Proposals 1 to 6 inclusive, Portage, Stark and Summit Counties, to Fenton Constr. Co., P. O. Box 310, Ashland, **$74,752*****5.86 mi. Type T-35, Paris, Newton and Braceville Twps., S. R. 5, Portage and Trumbull Counties, to Ohio Road Imprvt. Co., 30 E. Broad St., Columbus, **$122,754*****5.918 mi. Type T-35, Jefferson, Prairie and Franklin Twps., U. S. R. 40, Franklin and Madison Counties, to Boyd & Cook Co., 801 Gas & Electric Bldg., Dayton, **$102,936.** Grand total $1,542,863. Bids 5/24. CD 5/11—ENR 5/19.

Utah, Provo—City, c/o I. G. Bench, recdr., curb and gutter in Paving Dist. 50, to Young & Smith, Beason Bldg., Salt Lake City, **$119,000.** Bids 5/10. Earl Conder, City Hall, city engr.

Wis., Milwaukee—City, City Hall, 200 Wells St., c. conc. paving N. 84 St., to R. Beaudoin, 1515 N. 37 St., Zone 8, **$55,971;** sheet asph. wearing surf., N. Teutonia Ave., to W. F. Hunt, 2808 N. Sherman St., Blvd., Zone 10, **$120,936.** Bids 5/27, awarded 5/31.

Que., Montreal—Municipality, paving, sidewalks on Dupuis Ave., to Charles Duranceau, Ltd., 2545 Jacques Hertel St., **$50,725.** H. A. Gibeau, city engr. CD 2/23.

EARTHWORK, WATERWAYS

BIDS ASKED

June 21

†Arkansas—U. S. Eng., 300 Broadway, Little Rock, levee and drainage structures, Lot IV, west of Morrilton, Conway County Levee Dists. 3 and 7, Conway, Inv., Serial No. Eng-62-050-49-74. CD 6/1—ENR 6/9.

†Illinois—U. S. Eng., 826 U. S. Court House & Custom House, 1114 Market St., St. Louis 1, Mo., 54 in. gravity drainage structure, Grand Tower Drainage and Levee Dist. Proj. Item 3-A (1), Jackson Co., Inv. No. Eng-23-065-49-140. Extended date. CD 5/18—ENR 5/26.

●Pennsylvania—Dpt. Forests & Waters, 404 Education Bldg., Harrisburg, 3 temporary dams in vicinity of Birdsboro and Douglassville, and Pittstown in River, Sect. III of Schuylkill River Desilting Proj., Berks and Montgomery Counties, $500,000; 3 temporary dams over above Pickering Creek, and at sites of Pawlings and Catfish Dams, in River Sect. V of Schuylkill River Desilting Proj., Montgomery Co. $500,000. Plans deposit $10 each. Schuylkill River Project Engineers, 20 S. 15 St. Phila., engrs.

†Va., Norfolk—U. S. Eng., foot of Front St., dredging range beacons, Norfolk Harbor, Inv. Serial No. Eng-44-110-49-207.

June 22

†Illinois—U. S. Eng., 826 U. S. Court House & Custom House, 1114 Market St., St. Louis 1, Mo., approx. 250,000 cu. yd. levee embankment, East St. Louis and Vicinity Proj. Item II—A(1), St. Clair Co., along east bank of Mississippi River between Miles 178.3 and 179.3 above mouth of Ohio River, Inv. No. Eng-23-065-49-141. Extended date. CD 6/2—ENR 6/9.

†Louisiana—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, approx. 25,000 cu. yd. uncompacted earthwork, Mississippi River

Levees, Barataria Levee Dist., Plaquemine Parish. Item M-28/1-R Sunrise Levee, Serial No. Eng-16-047-49-323.

†Minn., Minneapolis—U. S. Eng., 1217 U. S. Post Office & Custom House, St. Paul, Zone 1, repairing Ogee Sect. of Dam, Stake 2, Lock and Dam 1, Mississippi River, incl. cofferdam, construction and unwatering operations, removing old concrete placing new concrete, removal and reinstallation flashboards, etc., Serial No. Eng-21-018-49-103.

About June 23

†Illinois and Missouri—U. S. Eng., 826 U. S. Courthouse and Custom House, 1114 Market St., St. Louis 1, Mo., levees Grand Tower Drainage and Levee Dist., Proj. Items I-C (1) and I-C (2) Jackson Co., Illinois and Perry Co., Missouri, along east bank of Mississippi River in vicinity of Grand Tower, Ill., opposite Mississippi River Miles 76.5 to 79.0 above the mouth of Ohio River.

June 24

†Illinois—U. S. Eng., 826 U. S. Courthouse & Custom House, 1114 Market St., St. Louis 1, Mo., levees Wood River Drainage and Levee Dist., Proj. Item II-A (1), II-A (2) and II-A (3), Madison Co. Inv. Eng. 23-065-49-139. Extended date. CD 6/3—ENR 6/9.

June 27

Tex., San Antonio — Rexar Co. Courthouse, landscaping, coliseum zone grading, levelling, drainage, roads, $100,000. Phelps & De Wees & Simmons, 1501 Majestic Bldg., B. Cocke, 3501 Broadway, and Atlee B. & Robert M. Ayres, Transit Tower, archts.

June 28

†Arizona and Nevada—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Kingman, Ariz., miscellaneous structural steel for cable trays and walkway for Davis Dam and Davis Power Plant, Davis Dam Proj., Spec. 2700. L. N. McClellan, ch. engr.

†Oregon—U. S. Eng., Pittock Block, Portland, Zone 5, channel stabilizers and slope protection works along both banks Long Tom River for 1.6 mi. near Fern Ridge Reservoir, Lane Co., Eng-35-026-49-560.

Before July 1

†Alaska, Nome—U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash., seawall at Nome Harbor, 3,350 ft. long along beach. CD 12/11/46—ENR 12/26/46.

LOW BIDDERS

†Arkansas—U. S. Eng., 300 Broadway, Little Rock, June 1, constr. approx. 260,000 cu. yd. levee embankment left bank Petit Jean River and right bank Arkansas River, Yell Co., Serial No. Eng-03-050-49-61, from D. B. Hill, 115 N. Spring St., Little Rock, **$53,096.** Est. $61,125. CD 5/11—ENR 5/19.

†Oklahoma—U. S. Eng., P. O. Box No. 61, Tulsa, sluice gates, accessories for the Tenkiller Dam, Inv. No. Eng-34-066-49-107, to United Eng. Co., 300 Beale St., San Francisco, Calif., **$274,799.** Est. $300,000. Bids 5/27, awarded 6/1. CD 5/3—ENR 5/5.

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, emergency levee repairs on Trinity River in vicinity of Fort Worth, 100,000 cu. yd. compacted fill, excav., 2 stop log structures, Tarrant Co., to Havencamp Constr. Co., Flatiron Bldg., Fort Worth, **$97,975.** CD 6/9/44—ENR 6/29/44.

Tex., Beaumont — Jefferson County Water Control & Improvt. Dist. 6, Sect. 1, drainage or storm sewers, area north of city, to Lancaster & Love, Inc., Beaumont, **$171,182.** Bids 4/5. CD 3/23.

Ont., Fort Williams—Dpt. P. Wks., Ottawa, dredging 365,000 cu. yd. sand, silt and clay, to Consolidated Dredging, Ltd., 54 Chestnut Park, Toronto. Approx. **$257,725.** Bids 6/1. CD 5/26—ENR 6/2.

Que., St. Gregoire—Province of Quebec, Dpt. Agriculture, Quebec City, drainage works, to P. Baillargeon, 264 Champlain St., St. Johns. Approx. **$55,000.** I. Marsolais, 565 Lindsay St., Drummondville, engr.

AIRPORTS AND AIRBASES

BIDS ASKED

About June 21

†S. C., Shaw Field (Sumter P.O.)—GROUND CONTROL APPROACH—U. S. Eng., Post Office Bldg., Savannah, Ga., ground control approach sys. facilities, Shaw Air Force Base. Plans deposit $10.

June 23

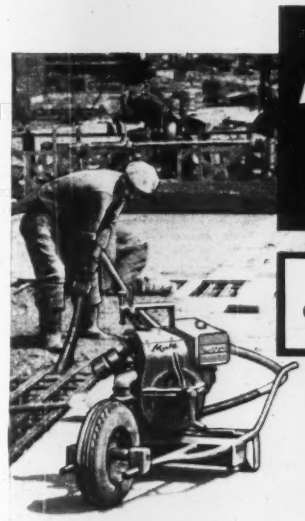
†Pa., Coraopolis—LEAN-TO—U. S. Eng., First and Douglas Sts., Wash. 25, D. C., hangar with 2 story lean-to at Greater Pittsburg Airport, Serial No. 49-080-49-177 (49) NG. CD 6/3.

June 24

†Mass., East Boston (Sta. Boston)—GUARD FACILITIES—U. S. Eng., Bldg. No. 21, U. S. Naval Drydock, South Boston, air national guard facilities at Logan International Airport, Serial No. Eng-19-016-49-106.

June 27

Kan., Hutchinson — ADMINISTRATION BLDG.—City, administration bldg. at municipal airport, $75,000. McCrackin & Hiett, Hutchinson, archts. CD 12/15/44 — ENR 12/28/44.



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INCORPORATED IN EARLE OPERATING MACHINERY **EARLE GEARS**

LOW BIDDERS

Ia., Red Oak — HANGAR — City, rejected bids May 20, hangar at municipal airport, **$75,000.**

Tex., Houston — AIRPORT — City, M. H. Westerman, secy., City Hall, Brazos St., June 1, exten. 1,100 ft. east-west runway, exten. 1,087 ft. northeast-southwest runway; ducts for future lighting, from N. E. Kennedy & Sons, 605, 1st Nat. Bank Bldg., **$183,639.** Est. $226,000. CD 5/24—ENR 5/26.

PUBLIC BUILDINGS

BIDS ASKED

June 21

†Ga., Camp Gordon—U. S. Eng., Post Office Bldg., Savannah. 4 nurses quarters alterations. Serial No. Eng-69-133-49-198. Extended date. CD 5/18—ENR 6/2.

†Ga., Fort Benning—U. S. Eng., P. O. Box 1160, Mobile, 7, Ala., family type quarters. Serial No. Eng-01-076-49-192.

June 22

†Me., Augusta—Officer in Charge Construction, First Naval Dist., Headquarters, 495 Summer St., Boston, Mass., 2 story, 20x156 ft. wing, and three 40x112 ft. rear wings, Weed U. S. Naval & Marine Corps Reserve Training Center, Spec. 22721. Plans deposit $30.

†Md., Edgewood—U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C., quonset huts at Army Chemical Center. Serial No. 49-080-49-175-(47)M.

†Va., Chincoteague—Pub. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, 1 story, 30x60 ft. Bldg. No. F-8, addn. at Naval Aviation Ordnance Test Station, Spec. 22588. Plans deposit $10.

June 23

†O., Mariemont—U. S. Eng., Madison Ave. and 8 St., West Huntington 18, W. Va., Ohio River Division Laboratories addn., alterations. Serial No. Eng-46-022-49-155. CD 6/2.

June 24

Mass., Lynn—City of Lynn Housing Auth., John Cavanaugh, chn., 58 Andrews St., 78 unit brick veterans housing. Prof. 200-1. $750,000. Melvin F. Coombs, 56 Central Ave., archt. CD 11/17—ENR 12/9.

†Tex., Camp Hood (P. O. Killeen) — U. S. Eng., 656 Santa Fe Bldg., Galveston, construct N.C.O. type family quarters, Inv. No. Eng-41-243-49-295. CD 5/25—ENR 6/2.

June 27

†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, public sanitary bldg., appurtenances, Loyalhanna Dam. Serial No. Eng-56-058-49-141.

Ont., Toronto—University of Toronto, c/o Mathers & Haldenby, archts., 15 St. Mary St., archives bldg. $400,000. CD 1/2 47—ENR 2/6/47.

June 29

●Mass., Brockton — City of Brockton Housing Auth., S. Sherman, chn., City Hall, thirty-two 2 story, basmt., brick bldgs., and 1 sixty-eight 2 bedroom units, and fifty-six 3 bedroom units, veterans housing, Eaton and Cross Sts. off Prospect St. $1,268,000. Plans deposit $25. Edward Sears, Read & Assoc., 177 State St., Boston, archts. CD 1/20—ENR 2/17.

Minn., Olivia—Village of Olivia, W. Wiersma, clk., City Hall, and Renville Co., C. A. Strom, aud., Olivia, 2 story, bsmnt., 40x145 ft. hospital, for Renville Co. Hospital, $250,000. Plans deposit $25. C. H. Buetow, 570 N. Snelling Ave., St. Paul, archt. CD 6/2—ENR 6/17.

Pa., Meadville—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, general contract, heating and ventilating, plumbing and drainage, electrical work for highway maintenance bldg. for State Hys. Dpt. Plans deposit $10 for general, $5 for others. W. B. Jefferis, c/o owner, ch. engr.

June 30

●Tenn., Knoxville—Bd. Educ., 624 Lamar St., Fulton High School. Approx. $1,000,000. Extended date. Barber & McMurry, 2375 Kingston Pike, archts. CD 5/6—ENR 5/19.

LOW BIDDERS

Conn., Greenwich — Town Bd. Educ., Greenwich, May 24, 2 story, basmt., brick, steel, concrete Riverside School addn., Hendrie Ave., from Ratkgeb Walsh Co., 1 Marion Pl., Port Chester, N. Y. **$474,862.** CD 5/10—ENR 5/12.

Conn., Norwich—City, W. J. Barrett, chn., Norwich Housing Auth., 225 Main St. June 3, 250 family units incl. 17 five room houses, 5 four room duplex houses, 5 single homes, sidewalks, grading, sewers, streets, from Zachae Brothers, Talman Street Exten., Norwich. **$523,887.** CD 5/18—ENR 5/26.

Conn., Orange—Town, John Demarest, chn., Bd. Edu., Town Hall, May 23, brick, steel school addn., from Edwin Moss & Son, 555 Grant St., Bridgeport. **$160,000.** CD 5/19—ENR 5/19.

●Mass., Lawrence—City of Lawrence Housing Auth., J. Sarris, exec. dir., 56 Melvin St., June 3, veterans housing, Osgood and Phillips Sts., Prof. 200-1, from Davison Constr. Co., 1356 A Elm St., Manchester, N. H. **$2,098,851.** CD 5/17—ENR 5/19.

Mass., Northampton—City of Northampton Housing Auth., City Hall, June 1, veterans housing, from M. J. O'Connor, 696 Bridge St., **$858,000.** CD 5/20—ENR 5/26.

Mass., Worcester—City, Bureau P. Bldgs., City Hall, school, addns., alterations, Columbus Park School, from Granger Contg. Co. Inc., 306 Main St., Worcester, **$612,646.** Johnson & Rustiglian, 390 Main St., archts. CD 1/13—ENR 2/3.

N. C., Wilson—Bd. Directors North Carolina Sanatorium, c/o W. Lee Grevely, Wilson, general contract White Patients' Wing addn., from Jones Bros. & Co., Wilson, **$328,491.** Walter Hook & Assoc., Inc., 305 W. 4 St., Charlotte, archts.

†Washington—Bonneville Power Admin., 729 N. E. Oregon St., Portland, 8, Ore., Snohomish substation addns., Inv. 4616, from Odegard Constr. Co., Tacoma, **$120,071; $133,251** alt. CD 5/13—ENR 5/26, under Unclassified.

CONTRACTS AWARDED

Ill., Wood River—Bd. Educ., School Dist. 144, F. C. Dyckeman, secy., East Alton-Wood River Community High School, Wood River, general contract, rein.-con. brick, steel, stone gymnasium and vocational bldg. addn., East Alton-Wood River Community High School, to Hellrung Constr. Co., 100 Cherr St., Alton, **$557,433.** CD 2/11—ENR 2/17.

●Mass., Everett—City of Everett Housing Auth., 48 E. Elm St., veterans housing, Glendale Park, to S. Volpe & Co. Inc., 150 Congress St., Boston, **$2,598,900.** Bids 5/17, awarded 5/27. CD 5/24—ENR 6/2, under LB.

Mo., Jefferson City—Lincoln University, S. D. Scruggs, pres., Jefferson City, two 4 story, 48x138 ft. brick, concrete boys dormitory, Lincoln University, to George E. Baumann, 713 E. Austin St., Nevada, **$563,688.** Bids 4/14. CD 4/21—ENR 4/28, under LB.

●N. Y., Cortland—New York State Dormitory Auth., 93 State St., Albany, residences halls and faculty bldg., to John J. Harvey Co., 38 Campion Rd., Utica, **$1,261,093.** Bids 5/17. CD 4/28—ENR 5/12.

●†Ore., Portland — Federal Reserve Bank, U. S. Bank Bldg., Portland, 4 story, subbsmnt. bank, to Ross B. Hammond, 1241 N. Williams St., **$1,761,300.** Bids 4/28, awarded 5/30. ENR 5/5, under LB.

S. C., Columbia—S. C. State Hospital, Columbia, receiving and ward bldg., to General Constr. Co., Palmetto Bldg., **$102,869.**

N. B., Saint John—Bd. School Trustees, Saint John, F. E. Christiansen, secy., Princess Elizabeth School, to B. A. Ryan, Ltd., 1808 William St., Montreal, Que., Approx. **$643,555.** Alward & Gillies, 1 Market Sq., archt.

Ont., Weston—Humber Memorial Hospital Assn., J. W. Pinck, chn., 117 King St., 2 story, bsmnt., 45x170 ft. 50-bed general hospital, and 1 story, bsmnt., 51x145 ft. north section, to Aricd Construction Co. Ltd., 1 Dundas St. West, Toronto, Approx. **$500,000.** CD 3/22—ENR 4/24.

COMMERCIAL BUILDINGS

BIDS ASKED

June 21

Mass., Pittsfield—Hillcrest Hospital, 788 N. St., remodel hospital, West St. **$290,000.** Extended date. Louis R. Jallade, 597 Fifth Ave., New York, N. Y., archt. CD 10/14—ENR 10/28.

Mo., Kirksville—Kirksville College of Osteopathy & Surgery, Kirksville, hospital, $300,000. Swanson, Timm & Brey, Reliance Bldg., Kansas City, Mo., archts.

June 22

Que., Granby—A. Berlanger, archt., 128 Blvd. Queen, Sherbrooke, 64x144 ft., steel, stone church and presbytery, oil-fired, hot water heating, etc. for Parish of St. Joseph, Rev. J. Paul Parent, pastor. $250,000. G. Beaulein, 3536 Cote St. Catherine Rd., Montreal, engr. CD 12/3—ENR 12/16.

About July 1

Tenn., Nashville—Baptist Sunday School Bd., 9 and Commerce Sts., office addn. Approx. $500,000. Hart, Freeland & Roberts, Third Nat'l Bank Bldg., archts. CD 12/23—ENR 12/30.

SOON LETS CONTRACT

Kan., Emporia—Newman Memorial Hospital, Emporia, soon lets contract hospital addn. $250,000. Brinkman & Hagan, Emporia, archts. CD 3/9—ENR 3/31.

La., Alexandria—Southern Bell Telephone Co., Hurt Bldg., Atlanta, Ga., soon lets contract main office bldg., addns., alterations. Shutze & Armstead, Candler Bldg., Atlanta, Ga., archts.

Mo., St. Louis—Markus Evangelical Lutheran Church, c/o Froese, Maack & Becker, archts., 705 Olive St., St. Louis, soon lets contract 1 story bsmnt., 75x43½ ft. and 22x80 ft. brick, concrete parochial school, 22 and Angelica Sts.

LOW BIDDERS

Ala., Birmingham—St. Vincents Hospital, 2701 9 Court S., June 2, 80-bed hospital addn., from Foster & Creighton, 1720 Lamb Blvd., **$989,740.** CD 5/9—ENR 5/19.

Ala., Montgomery—St. Judes Catholic Hospital, Montgomery, June 1, general contract hospital and equip., from Beers Constr. Co., 76 Ellis St. N. E., Atlanta, Ga., **$907,795.** CD 5/10—ENR 5/26.

Tenn., Knoxville—East Tennessee Children's Hospital, c/o low bidder, May 30, hospital addn., from J. M. Dunn & Son, 245 Broad St., **$369,000.** CD 5/20—ENR 5/26.

CONTRACTS AWARDED

●Conn., Meridien—Fireside Homes Co., c/o Everett C. Bradley, archt., 85 Whitney Ave., New Haven, 175 asbestos shingle siding 25x28 ft. frame 4½ room houses, Coe Ave. Sect. Owner builds. **$1,200,000.** CD 6/3.

Ill., Chicago—Exchange National Bank Trustee, 134 S. LaSalle St., Zone 3, 5 story, 60 unit steel, brick apartment, 2543 W. Catalpa St. and 5 story 60 unit apartment, 2529 W. Fitch St., to Missner Constr. Co., 2940 N. Campbell St., Zone 18, **$400,000** each. Awarded 5/26. Carl J. Kastrup, 7346 W. Madison St., Forest Park, archt.

Ill., Chicago—Ner-Tamid Congregation, 2836 W. Rosemont, Zone 45, steel, brick library, auditorium, recreation center, to Morris B. Handler, 2718 W. Chicago St., Zone 22, **$400,000.** Friedmand Alschuler & Sincere, 223 W. Jackson St., Zone 6, archts.

●Ill., Tinley Park—A. A. Lewis & Co., W. Washington St., Zone 2, 370 residences and community center, separate contracts, **$5,000,000.** Leon Hyzen, 1129 N. Dearborn St., Chicago, Zone 10, archt.

Mo., St. Louis—Owner, c/o A & P Food Store, lessee 1625 S. Grand Blvd., 1 story, 80x140 ft. brick super-market, concrete fdn., and floor, 18 St. and Russell Blvd., to Robinson Erection Co., 5540 W. Park Ave., Zone 10, Marcel Boulicault, 1294 Ambassador Bldg., 411 N. 7 St., Zone 1, archt.

●Neb., Omaha—Omaha Industrial Housing Corp., 2323 Dodge St., 496 apartment units. Owner builds. Approx. **$4,000,000.**

N. J., Harrison—K & R Co., c/o David Cronheim, 39 Branford Pl., Newark, 1,100 seat, motion picture theatre. Owner builds. **$250,000.** John & Drew Constr., 2 W. 47 St., New York, Zone 19, N. Y., archts.

●N. J., Ridgewood—Reliable Homes, Ralph Carlette, pres., 144 Lawrence Ave., Hasbrouck Heights, 420 houses on 126 acre tract or south side of Grove St., west of Paramus Rd. Owner builds. **$3,400,000.**

Tenn., Nashville—Crescent Amusement Co., c/o contractor, theater and shopping center, to Sumner Constr. Co., 912 8 Ave N. Approx. **$300,000.** Bids 5/21. CD 5/20—ENR 5/26.

Utah, Provo—Bonneville Ward of Latter Day Saints Church, Provo, combined two ward chapel by Bonneville Ward, and new ward to be organized from 8th ward of the Church of Jesus Christ of Latter Day Saints, own forces, **$260,000.** E. O. Anderson, 47 E. South Temple St., Salt Lake City, archt.

Utah, Salt Lake City—Holy Cross Hospital, 1045 E. 1st South St., general contract hospital school of nursing and nurses residence, to Talboe & Harlin Constr. Co., Provo, **$708,000.** CD 1/22/47—ENR 1/30/47.

Alta., Edmonton—Owner, c/o contractor, community center, incl. 12 apartment houses, theatre, shops, garage, etc., McKernan Lake Dist., between 111 and 112 Sts. and 76 and 75½ Aves., to Donald E. Titus, 1130 63 St. Approx. **$750,000.**

Ont., Mimico (Postal Dist. Toronto)—P. D. Greco, 1808 Eglinton Ave., 3 story, concrete, brick apartment, Lake Shore Rd. Owner builds. **$750,000.**

INDUSTRIAL BUILDINGS

BIDS ASKED

June 21

Mo., St. Louis—PLANT—H. Wenzel Tent & Duck Co., 1035 Paul St., 1 story, part bsmnt., 100x121 ft. and 37x55 ft. L-shaped concrete block, steel plant addn., 1035 Paul St. Frank L. Thompson, 104 W. Adams St., Kirkwood, St. Louis, P. O., Zone 22, archt.

June 22

Va., Portsmouth — FACTORY—Portsmouth Industrial Foundation, Portsmouth Chamber of Commerce, Portsmouth, 1 story, 144x178 ft., brick, steel factory for E-Z Thread Co. Plans deposit $20. Orin M. Bullock Jr., 424 Dinwiddie St., archt.

June 30

Minn., Jackson—PLANT—Federated Rural Electric Assn., Jackson, diesel power plant, appurtenant structures, crane and heating sys. $125,000. Pfeifer & Shultz, 702 Wesley Temple Bldg., Minneapolis, engrs. CD 1/19—ENR 2/3.

SOON LETS CONTRACT

Ky., Louisville—PLANT—Louisville Brick & Tile Co., c/o A. J. Klee, 1328 S. 12 St., soon lets contract plant. $100,000.

Tenn., Memphis—SALES and SERVICE—Klyce Motor Co., c/o E. L. Harrison, archt., 193 S. Idlewood St., soon lets contract auto sales and service.

Tenn., Somerville — WAREHOUSE, etc. — Chickasaw Electric Corp., Somerville, soon lets contract, warehouse and office. W. C. Lester, Dermen Bldg., Memphis, archt.

Virginia—SUBSTATIONS—Virginia Electric Cooperative, Bowling Green, soon lets contract 4 sub-stations, in Caroline, Louisa and Essex Counties. C. W. Hylton, Bowling Green, engr. CD 12/22/48—ENR 2/5/48, under unclassified.

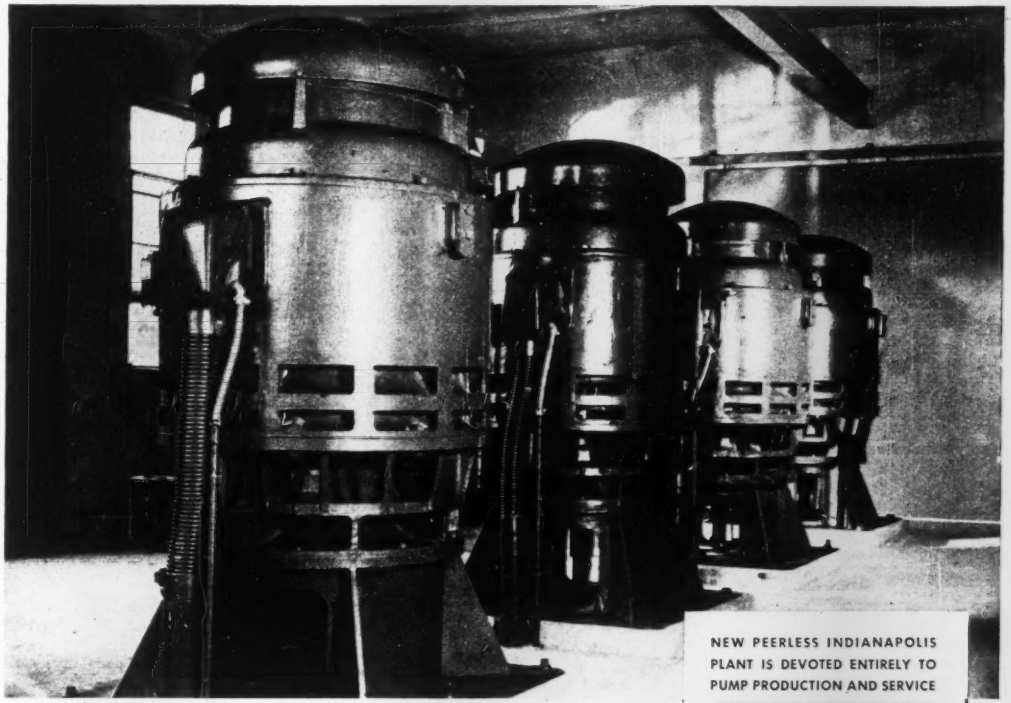
LOW BIDDERS

N. J., Camden—PLANT—Kaplan & Zubrin, 713 Kaigh Ave., rejected bids, food processing plant, approx. **$68,000.** Will readvertise. CD 5/5—ENR 6/2.

Wash., Oroville—WAREHOUSE—Okanogan County Public Utility Dist. 1, Oroville, 88x120 ft. masonry warehouse, from D. R. Frix, Oro-

(Continued on page 56)

PEERLESS VERTICAL TURBINE PUMPS



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Regardless of your requirements, a versatile Peerless vertical turbine pump will squarely meet your pumping demands. Peerless offers widest capacity range, from 15 to 30,000 gpm against heads to 1000 feet. You can have your choice of oil lubricated or water lubricated types and a choice of power drive, direct-connected electric, right angle gear, V or flat belt or combination drives. Write for individual Bulletins describing the applications of Peerless pumps to these services.

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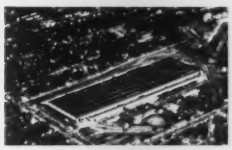

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Dedicated to this Challenge:

TO BUILD A GREATER AMERICA

On the opposite page is the cover of ENGINEERING NEWS-RECORD'S "Building A Greater America" Issue to be published September 1.

The purpose of the "Building A Greater America" Issue is fivefold . . .

1. to commemorate the epic and inspiring engineering construction achievements of the past three-quarters of a century

2. to create a deeper understanding of the economic and social implications of construction and the key role of construction in American civilization

3. to help forward the building of a greater America by offering practical solutions to many of today's most perplexing engineering and construction problems

4. to instill a feeling of justifiable pride in all those who serve the engineering construction field in whatever capacity

5. to bring into sharp focus the tremendous opportunities and challenges ahead as we enter the second half of the greatest construction century in history.

PUBLISHING DATE—SEPTEMBER 1, 1949
CLOSING DATE—AUGUST 11, 1949

TO THE MANUFACTURERS . . . CONSULTING ENGINEERING FIRMS . . . CONTRACTING AND BUILDING FIRMS . . . AND ALL OTHER ORGANIZATIONS SERVING THE ENGINEERING CONSTRUCTION FIELD . . .

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ENGINEERING NEWS-RECORD

September 1, 1949

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The epic of America is a story of its construction men and their vision. First by hand, then with machines, the American dream of a better way of life has been made real for many, but not yet for all. As we face the next half of the twentieth century, America's destiny will challenge all the physical and spiritual resources of the construction fraternity. To build a greater America, to make the American dream a reality for all peoples . . . to that challenge this issue is dedicated.

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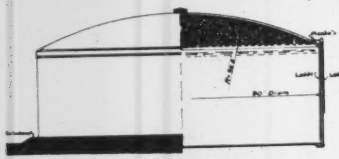

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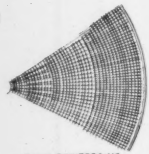

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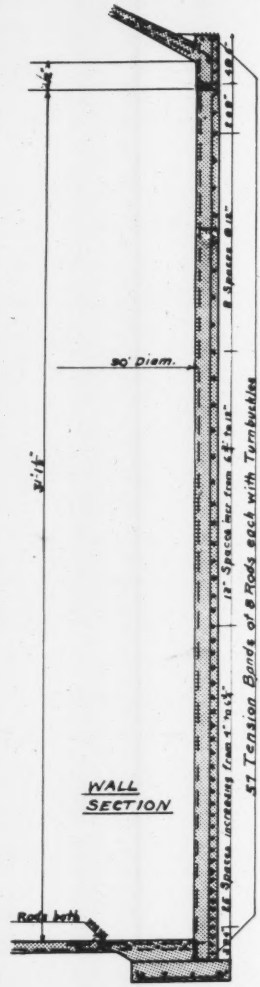
ECONOMY DOMES—REPLACEABLE



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READ THE FULL STORY ON PAGE 8 LAST ISSUE

BAY CITY

BAY CITY SHOVELS, INC., BAY CITY, MICHIGAN

(Continued from page 52)

ville, **$71,850.** W. R. Grant & Son, Lloyd Bldg., Seattle, Zone 1, archts.

CONTRACTS AWARDED

Ill., Chicago—PLANT EXPANSION—Samuel Bingham's Son Mfg. Co., 636 S. Sherman St., Zone 5, 79x101 ft. plant expansion, to Carroll Constr. Co., 333 N. Michigan St., Chicago, Zone 1, **$90,000.** Awarded 5/26. Carr & Wright, 333 N. Michigan St., Zone 1, archts.

Ill., Chicago—FACTORY—Electro Products Laboratories, 4501 N. Ravenswood Ave., Zone 40, steel, brick factory, to Louis Cohen, 3751 W. Dickens St., Zone 47, **$68,000.** Awarded 5/25. Bernard Krauss, 179 W. Washington St., Zone 2, archt.

●**Ill., Summit**—BOILER PLANT—Corn Products Refining Co., 333 Michigan St., boiler plant, to Bedford Constr. Co., 333 N. Michigan St., Chicago, Zone 1, **$8,000,000.** Awarded 5/23. Sargent & Lundy, 140 S. Dearborn St., Chicago, Zone 3, engrs. CD 5/26—ENR 6/16, under Ill., Bedford Park.

Kan., Ashland—GRAIN ELEVATOR—Ashland Co-operative Exchange, Ashland, grain elevator, to Chalmers & Borton Co., Hoke Bldg., Hutchinson, **$116,000.**

Kan., Solomon—HEADQUARTERS—D. S. O. Rural Electric Co-operative, Solomon, 1 story, 72x125 ft., brick, steel, concrete rural electric headquarters bldg., to Mort J. Green, Ulrich Bldg., Manhattan, **$98,950.** Est. $90,000. Bids 5/17. CD 5/16.

O., Toledo — PLANT, etc. — Sun Oil Co., Woodville and City Limits, 2 story, bsmnt., 46x100 ft., plant administration bldg., and new all glass gatehouse, to George Lathrop & Sons, Inc., 1510 Montcalm St. Approx. **$200,000.** Peterson, Hoffman & Barber, Spitzer Bldg., archts.

Pa., North Hills (Sta. Glenside)—GARAGE—Samuel Glasgow, 2625 Church Rd., Glenside, 1 and 2 story, 70x145 ft., masonry garage and office, separate contracts. Approx. **$68,000.** Ralph Caldwell, Sackettsford Rd., R. D. Ivyland, archt.

Tenn., Memphis—SALES and SERVICE—Auto Sales Co., c/o contractor, auto sales and service, to H. F. Vann Co., 1089 Galloway St. Approx. **$75,000.**

Tenn., Memphis—EXPRESS TERMINAL—B. & M. Express Co., c/o contractor, truck express terminal to Southern Builders, 628 Dermon Bldg. Approx. **$68,000.**

UNCLASSIFIED

BIDS ASKED

June 21

†Ga., Fort Benning—UTILITIES, etc.—U. S. Eng., P. O. Box 1169, Mobile, 7, Ala., utilities and site imprvs., for family type quarters, Serial No. Eng. 01-076-49-193.

†Missouri—GAS HEATING SYSTEMS—U. S. Eng., 300 Broadway, Little Rock, propane gas heating sys. for operators quarters, Clearwater Dam, Black River, White River Watershed, Serial No. Eng-03-050-49-73.

†S. C., Georgetown—MOORING FACILITIES—Com. C. O. Rinehardt, Officer Charge Construction, P. O. Box 365, Naval Base, Charleston, addnl. mooring facilities at Naval Reserve Training Center, NOY 18292, Spec. 22110, for Yards & Docks annex, Navy Dpt., Arlington, Va. Plans deposit $10.

June 22

La., Lafayette—ELECTRIC DISTRIBUTION SYSTEM—City, City Hall, electric distr. sys. addns., alterations. Contr. 2. Plans deposit $5. Barnard & Burk, Triad Bldg., Baton Rouge, engrs. CD 3/8—ENR 3/10.

†N. C., Camp Lejeune (Bi ew Bern)—ELECTRIC POWER FEEDE...—Pub. Wks. Office, Bldg. No. 1005, Marine Barracks, underground and overhead 12,470 volt electrical power feeders and 999 kva. substation at Marine Barracks, Spec. 22815. Plans deposit $10.

Que., Bolschatel—WHARF—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf reconstruction. Approx. **$63,000.** Plans deposit **$20.** R. Blais, c/o owner, engr.

Que., Ragueneau—WHARF—J. M. Somerville, secy., c/o Dpt. Pub. Wks., Hunter Bldg., Ottawa, Ont., wharf extens., imprvs. Approx. $105,000. Plans deposit $20. R. Blais, c/o owner, engr. CD 3/18.

June 23

Illinois—RURAL DISTRIBUTION LINES—Tri-County Electric Co-operative, Inc., C. Glenn Jones, pres., 1106 Main St., **Mount Vernon**, 99.44 mi. 7.2 KV distr. lines, 9 mi. 34.5 KV transmission lines, Jefferson and Marion Counties. Prof. Ill. 41 H. & L. Jefferson. Plans deposit $25. Extended date. Crazen & Assoc., 8135 Forsyth Blvd., Clayton, St. Louis, Zone 24, engrs. CD 1/17—ENR 1/27.

About June 24

†Tex., Camp Hood—BATHHOUSES—U. S. Eng., 606 Santa Fe Bldg., Galveston, 2 bathhouses, in Bell Co. near Belton and Killeen, Inv. No. 41-243-49 (ACWF)-4.

June 28

†Washington — SUBSTATION — Bonneville Power Admin., 729 N. E. Oregon St., Portland 8, Ore., constructing Naselle Substation, near Naselle, Pacific Co., Inv. 4683. Plans deposit $25.

June 30

Nebraska—RURAL DISTRIBUTION LINES—Dawson County Public Power Dist., **Lexington**, 409.7 mi. rural distr. lines, Sherman, Buf-

Jalo and Hall Counties. $400,000. Raymond H. Reed & Co., Columbus, engrs. CD 5/9—ENR 5/29.

July 6

Pa., Phila.—REPLACING PIPING—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, replacing hot and cold water piping for Bldgs. N-6 and N-7, Phila. State Hospital (Byberry). $230,000. Plans deposit $7.50. G. W. Peper, Jr., 225 S. 15 St., archt. W. B. Jefferis, c/o owner, ch. engr. CD 2/28.

July 14

†Arizona-Nevada—CIRCUIT BREAKERS, etc.—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Yuma, Ariz., 2 power circuit breakers and outdoor disconnecting switches for Parker-Gila Drop No. 4 Tap, Davis Dam Proj., Spec. 2695. L. N. McClellan, ch. engr.

†Washington — TRANSFORMERS, etc.—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing and del. f.o.b. cars shipping point or f.o.b. cars at Quincy, out-door type transformer, station type lightning arresters, outdoor hook-gap switch, outdoor-type disconnecting fuses, each with 2 fuse units for Quincy Pumping Plant switchyard, Columbia Basin Proj., Spec. 2696. L. N. McClellan, ch. engr.

LOW BIDDERS

●**Nebraska**—CENTRALIZED TRAFFIC CONTROL SYSTEM — Chicago, Burlington & Quincy R. R. Co., H. R. Clarke, ch. engr., 547 W. Jackson Blvd., Chicago 6, Ill., 240 mi. centralized traffic control sys. from Ravenna to Alliance. Owner builds. Approx. **$1,003,000.**

North Carolina — RURAL DISTRIBUTION LINES—Four County Electric Membership Corp., Burgaw, June 1, labor for 200 mi. rural distr. lines, Pender Co., from Sumter Builders, Inc., Sumter, S. C., **$211,674.** CD 5/25.

Tex., Houston—ZOO—City, Oscar Holcombe, mayor, City Hall, 900 Brazos St., June 1, Herman Park Municipal Zoo, from Ball-Hubbell Constr. Co., 3400 W. Dallas Ave., **$296,000.** CD 5/25.

†Washington — TRANSMISSION LINE CLEARING; RIGHT-OF-WAY — Bonneville Power Admin., 729 N. E. Oregon St., Portland 8, Ore., June 1, clearing right-of-way 21.7 mi. for North Bonneville-Troutdale 230 kv. transmission line, Inv. 4619, Skamania and Clark Counties, from M. A. Pithoud, Vancouver, **$224,096.** CD 5/13—ENR 5/19.

CONTRACTS AWARDED

Calif., Los Banos — SWIMMING POOL — West Side Union School Dist., Los Banos, rein.-con. swimming pool at West Side High School, to C. Norman Peterson, 2382 9 St., Berkeley, **$54,250.** CD 5/2—ENR 5/5.

●**Iowa** — RURAL DISTRIBUTION LINES — Corn Belt Power Co-operative, Humboldt, 295 mi. 68 KV rural distr. lines, Palo Alto, Kossuth, Hancock, Floyd, Chickasaw, Bremer, Butler, Humboldt, Pocahontas, Buena Vista, Sac, Calhoun, Webster, Hamilton and Hardin Counties, to Walco Eng. & Constr. Co., 2408 E. 4 Pl., Tulsa, Okla., **$1,117,328.** Bids 5/19. CD 5/27—ENR 6/2, under LB.

Ia., Ames — DRIVE-IN THEATRE — Ames Theatre Co., Joe V. Gerbach, mgr., Ames, 750-car drive-in motion picture theatre on south side of Hy. 30 about 1 mi. west of city limits on 14-acre site, incl. screen tower, projection booth, concession stand, walks, ramps, drainage, etc., separate contracts. **$100,000.**

Missouri—RURAL DISTRIBUTION LINES—Grundy Electric Co-operative, Trenton, constructing Sect. 3, 281 mi. rural distr. lines, Mercer, Putnam, Harrison, Grundy, Sullivan, Livingston and Linn Counties, to C. & S. Constr. Co., Box 1166, Shelby, N. C., **$103,476.** Bids 6/13. CD 5/3—ENR 5/5.

Missouri—RURAL DISTRIBUTION LINES—Ozark Electric Co-operative, Mt. Vernon, 324.5 mi. rural distr. lines, 45.5 mi. line conversion, Lawrence and six nearby counties, to McGraw Constr. Co., Middletown, O., **$161,860.** Frank Horton & Co., Lamar, engrs. CD 5/12—ENR 5/26.

Missouri—RURAL DISTRIBUTION LINES—Sac-Osage Electric Co-operative, Eldorado Springs, labor only for 326 mi. rural distr. lines and 19 mi. conversion, Cedar Co., to McGraw Constr. Co., Middletown, O., **$124,416.** Bids 5/17. CD 3/17.

Mo., Sikeston—DRIVE-IN THEATRE—O. D. Clayton, Sikeston, 300 to 400 car capacity drive-in motion picture theatre, incl. screen structure, projection booth, concession stand, comfort stations, drives, ramps, walks, etc., adjacent to Hys. 60 and 61, near city limits, owner builds. Approx. **$50,000.**

Oklahoma—RURAL DISTRIBUTION LINES—Kiwash Electric Co-operative, Cordell, 166 mi. rural distr. lines, Washita Co. to South Constr. Co., Ardmore, **$104,222.** Est. $110,000. CD 6/2—ENR 6/9, under LB.

South Dakota—RURAL DISTRIBUTION LINES—Douglas Electric Assn., Armour, labor for 245.5 mi. rural distr. lines, Douglas Co., to K. L. Reither, Omaha, Neb., **$51,983.** Bids 5/15. CD 5/6—ENR 5/12.

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DIXIE CUP COMPANY, EASTON, PA.

CONSTRUCTION REPORTS—Second Section

Third Section Construction Reports on page 68

WATER SUPPLY

BIDS ASKED

June 20

Me., Brewer—City, Water Dist., H. E. Rider, chn., City Hall, 13.5 mi. watermains, incl. pile fdns., fittings, hydrants, valves, etc. $300,000. Plans deposit $10. Whitman & Howard, 89 Broad St., Boston, Mass., engrs. CD 5/16—ENR 6/9.

Pa., Steelton—Steelton Boro. Boro Hall, subsidence basins and modernizing filter plant, $150,000. Plans deposit $15, repairing relining slow and sand filters in filter plant, $80,000. Plans deposit $10. I. M. Glace, 1001 N. Front St., Harrisburg, engr. CD 9/28—ENR 10/14.

June 21

•Colorado—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., imprv. water supply facilities, equipping water wells, John Martin Reservoir Proj., Serial No. Eng-29-005-49-65. (**Correction**—bid date). CD 5/31—ENR 6/2.

June 25

Tex., Brenham—City, water treatment plant, $120,000. Freese & Nichols, 407 Dancger Bldg., Fort Worth, engrs. CD 5/25, under LB.

LOW BIDDERS

Ky., Newport—City, rejected bids May 25, WW imprvs., Contr. 1, water treatment plant, structures, L.B. **$284,885**; Contr. 2, filter equip. pumps piping and valves, L.B. **$305,000**; Contr. 3, raw water pump, Ohio River Pumping Station, L.B. **$56,609**. CD 4/5—ENR 4/7, under LB.

Va., Charlottesville—City, City Hall, May 25, WW imprvs., from Abbott & Ritchie, 320 West Cary St., Richmond, Proposal 1, **$203,000**. CD 5/12—ENR 5/19.

CONTRACTS AWARDED

Fla., Jacksonville—City, City Hall, water distr. sys. addns., extens. in Southside subdivisions, to Harry Pepper, Jr., Plumbing and Gorman Co., Inc., 119 W. 8 St., Zone 3, **$371,315**. Bids 5/19, awarded 5/26. CD 5/3—ENR 5/5.

Tex., Pasadena—City, c/o Mayor, approx. 6,000 ft. 8 in. lines from Little Vince Bayou to Deepwater Homes, to Holland Page, 7114 Georgetown Rd., Austin, **$106,350**. Est. $100,000. George A. Smith, city engr. CD 5/19, under CA.

Tex., Tyler—City, City Hall, imprv. extens., raw water pump station, Lake Tyler, to J. C. Oliver, Tyler, using 3 inter piers. **$125,582**. Bids 5/6. CD 5/14—ENR 5/26, under LB.

SEWERS, WASTE DISPOSAL

BIDS ASKED

On or About June 25

Va., Roanoke—City, Municipal Bldg., sewerage collecting extens., 8 and 12 in. pipe. Contr. Washington Heights area. Approx. $150,000. Mattern & Mattern, 118-A Campbell Ave., S. W., Roanoke, Va., and Alvord, Burdick & Howson, 20 N. Wacker St., Chicago, Ill., consult. engrs. CD 6/30/44—ENR 7/13/44.

LOW BIDDERS

Fla., Ft. Lauderdale—City, May 30, remodeling sewage treatment plant from Powell Bros. Constr. Co., Lauderdale. **$186,937.**

•Ill., Chicago—City, Dpt. Purchases, Contracts & Supplies, City Hall, June 7, auxiliary outlet sewers, Kostner Ave. Sew. No. 1, B., from Michael Pontarelli, Inc. 4248 N. Kilpatrick Ave. **$1,242,420.** CD 6/2.

Ill., Galesburg—City, Sanitary Dist., Carl Hart, pres., Galesburg, sewage disposal plant, settling tanks, circular filters, housing, from Foster Engr. Co., 1 Clay St., Hinsdale. **$188,500.** Alvord Burdick & Howson, 20 N. Wacker Dr., Chicago, Zone 6, engrs. CD 11/15/45—ENR 11/29/45.

Mass., Ludlow—Town, Bd. Selectmen, Town Hall, May 29, storm sewers, from E. T. O'Neil, 9 Elmwood Ave., Holyoke. **$122,204.** Tighe & Bond, 189 High St., Holyoke, engrs.

Minn., Edina (Minneapolis P. O.)—Village, 12 Hawthorne, clk., Village Hall, rejected bids May 9, sanitary sewers, areas bordering Village St. Louis Park. **$100,000.** CD 4/27.

N. D., Southwest Fargo—City, May 15, sewage and water mains, George B. Fuhrman, Melrose. **$179,288.** Thomas Eng. Co., 600 Kasota Bldg., Minneapolis, Minn.

N. D., Wyndmere—City, May 22, sewers, O. State Excavating Co., Fargo. **$79,-157**; water, Grant Jordan Constr. Co., **$76,387.** CD 5/12.

Tex., Dallas—East Oak Cliff sewer, City Hall and Municipal Bldg., May 24, storm sewers, Bonnie Brook to Denman Street project, Walnut Valley Trunk Sewer, Sect. 2, Walnut Hill Road to Forest, 12.5 mi. **$198,462**. Bid **$**

Tex., Houston—City, City Hall, May [illegible] sanitation Dr. [illegible] to Lake [illegible] W. [illegible] Ave. [illegible] Ave. [illegible] Ave

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U. S. GIANT SAND SUCTION HOSE.
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U. S. PEERLESS SUCTION HOSE.
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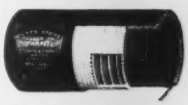

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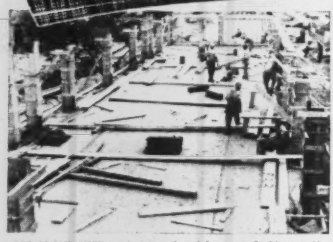

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(Continued from page 58)

June 24

La., Ringgold — (unof.) A. E. Woodward (owner) Town Hall, paving 2 mi. city streets.

June 28

N. Y., New York — New York City Housing Authority, Para Bldg. Zone 7, street and yard improvements for Harlem River Houses, Proj. NoNY-5, in area bounded by Bronxwood Ave., Astor, Wallace Ave., Williamsbridge Rd., Waring and Paulding Aves.; Williamsbridge Rd., Marace and Bronxwood Aves. Plans deposit $25. CD 5-24. ENR 5-19.

Tex., Houston — Harris Co., Hugh A. May, contr., Courthouse, 3½ mi. road construction and asph. paving E. Montgomery Rd. $87,994. How. A. Wise, Hlth., San Jacinto St., engrs. CD 5-24-47—ENR 5-19-47.

July 6

Pennsylvania — Pennsylvania Turnpike Comm., 11 N. 4 St., Harrisburg.

Chester Co. — grading, drainage, structures 3.855 mi. for Sec. 27B, Philadelphia Exten. of Pennsylvania Turnpike, beginning at point 800 ft. east of Twp. Rd. 424 in Wallace Twp., thence easterly 26,188 ft. to point 600 ft. east of L.R. 147, Upper Uwchland and Wallace Twps.

grading, drainage structures, paving 4.18 mi. Sec. 27C, Philadelphia Exten. of Pennsylvania Turnpike from point 700 ft. west of L.R. 147 in Upper Uwchland Twp. thence easterly 22,073 ft. to point 100 ft. east for L.R. 15189 upper Uwchland, Uwchland, W. Pikeland and Charlestown Twps.

grading, drainage, structures and paving 4.43 mi. Sec. 28A of Philadelphia Exten. of Pennsylvania Turnpike, from point 100 ft. east of L.R. 15189 in Charlestown Twp. easterly 23,377 ft. point 1400 ft. east of L.R. 15134, Charlestown Twp. Plans deposit $10 each. Michael Baker, Jr., Rochester, engr.

July 11

Pennsylvania — Pennsylvania Turnpike Comm., 11 N. 4 St., Harrisburg.

Lancaster Co. — grading, drainage, structure and paving 4.89 mi. Sec. 25A, Philadelphia Exten. of Pennsylvania Turnpike from point 230 ft. west of L.R. 36128 in Clay Twp. easterly for 25,813 ft. to point about 2,000 ft. west of Township Route 824 in West Cocalico Twp.

grading, drainage structures, paving Sect. 25B, Philadelphia Exten. of Pennsylvania Turnpike from point about 2,000 ft. east of Twp. Rte. 824 in W. Cocalico Twp. easterly for 14,374 ft. to point about 1,274 ft. east of Twp. Rte. 850 in East Cocalico Twp. Plans deposit $10 each. Gannett, Fleming, Goddry & Carpenter, 600 N. 2 St., Harrisburg, engrs. CD 5-19—ENR 5-5.

LOW BIDDERS

Calif., Los Angeles—Bd. Supvrs, Los Angeles Co., 501 Hall of Records, May 24, impry. approx. 1 mi. San Gabriel Blvd., Hermosa Dr. to Rose Ave., San Gabriel, Basich Bros. Constr. Co., and Basich Bros., 2850 San Gabriel Blvd., San Gabriel, **$108,541.** CD 5-5—ENR 5-12.

Calif., San Diego—City, Civic Center Bldg., May 24, impry. Myrtle Ave. and other streets, from V. R. Dennis Constr. Co., Box G, Hillcrest St., **$113,860.** Est. $114,279. CD 5-11.

Colorado—State Hy. Dpt., Denver, May 25, oil processing 12.795 mi. State Hy. 6, between Canon City and Pueblo and Colo. Proj. F-031-1 (14), grading, drainage, oil processing 9.795 mi. State Hy. 115 between Penrose and State Hy. 115, between Penrose and State Hy. 6, Fremont and Custer Counties, from Breen Constr. Co., 1550 E. Abriendo Ave., Pueblo, **$135,530.** Est. $150,657. CD 5-19.

●**Connecticut**—State, G. Albert Hill, hy. comr., Hartford, June 6, from L. G. DeFelice & Son, Inc., Stebbins St., New Haven, h. conc. 1.758 ft. one 24 ft. lane, on relocation of U. S. Rt. 1, East Lyme, **$101,013;** h. conc. restr. 26,617 ft. Whitney Ave., Rt. 10, and 10-A Hamden-North Haven, **$87,929;** 1,379 ft. two-24 ft. lanes, 19,249 ft. one-24 ft. lane, conc. resurfacing of U. S. Rt. 1, Old Lyme, **$297,804;** 18,950 ft. one 24 ft. lane relocation of U. S. Rt. 1, Old Lyme and East Lyme, **$235,695;** combination low bid for three projects: Old Lyme, Old Lyme-East Lyme and East Lyme, **$577,539***** from Pavements, Inc., 100 Whitney Ave., New Haven, h. conc. resurf. 7,788 lin. ft. Merritt Parkway, Greenwich, **$52,481***** from S. & M. Constr. Co., Inc., 450 Manton Ave., Providence, R. I., h. conc. 23,351 lin. ft. Hebron-Columbia Rd., and concrete bridge exten. over Dam Brook and 6x10 ft. reinforced box culvert U. S. Rt. 6-A, Hebron-Columbia, **$150,395***** from D. Arrigoni, 605 Main St., Middletown, grading, drainage, 1,749 lin. ft. on relocation of Rt. 9, Middletown Expressway, and altering railroad bridge, Middletown, **$135,524.** CD 5/23—ENR 6/2.

Ga., Augusta—City, John D. Twiggs, city engr., May 20, paving 60,000 sq. yd., various streets, from William F. Bowe & Co., Augusta, **$164,861.** CD 5-12—ENR 5-19.

Idaho—State Hy. Dpt., Boise, plant mix bit. 3.364 mi. U. S. 30, Nez Perce Co., from Stanley & Elkins Constr. Co., 2401 Main St., Boise, **$167,179.** Est. $155,481. CD 1-22-46—ENR 2-7-46.

Indiana—State Hy. Dpt., Indianapolis, May 31, bit. surf. tr. 75.93 mi. Crawfordsville Hy. Dist., Vigo, Clay, Owen, Putnam, Boone, Montgomery, Warren and Benton Counties, from Mohr Constr. Co., 1429 S. Union St., Kokomo, **$189,954.**

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Md., Baltimore—Mayor & City Council, City Hall, c. conc. streets, Contr. 975, from Tirnuth Building & Constr. Co., 4420 E. Eager St., **$100,304.** J. H. McKay, city engr.

Missouri—State Hy. Dpt., Jefferson City, June 8, c. conc. 1.802 mi. road from Glenstone Ave., Springfield, Rt. 65, Proj. U. 286, (7), and c. conc. 2.452 mi. road from Kearney St., Springfield, Rt. 65, Proj. U. 381 (3), both Green Co., from Kyss Constr. Co., 205 Farm Bureau Bldg., Des Moines, Ia., **$289,473** and **$161,207** respectively***c. conc. 2.437 mi. road from Boonville, east, Rt. 40 Proj. F 235 (9) 6-A; and c. conc. 4.223 mi. road from Boonville east, Rt. 40 Proj. F 235(9)-B, both Howard Co., from Payne & Dolan, Inc., 20 N. Wacker Dr., Chicago, Ill., **$59,015** and **$104,786** respectively***rolled stone base and seal, 4.537 mi. road from Iowa state line to Tarkio, Rt. 59, Proj. F 271 (1)-B, Atchison Co., from Frank Tracey, Chillicothe, **$108,975*****rolled stone base, seal 4.91 mi. road from Iowa state line to Tarkio, Rt. 59, Proj. F 271 (1)-A, Atchison Co., from Rowe Constr. Co., Cleveland Park, Kan., **$110,166*****, conc. 6.283 mi. road from High St., Jefferson city, Rt. 54, Proj. U. 501 (2), Cole Co., from C. E. Maxwell & Son, Columbus, **$73,433,** alternate 3, CD 5-18—ENR 5/26.

●**New York**—Bureau Contracts & Accounts, Alfred E. Smith Memorial Office Bldg., Albany, June 5, h.conc. 4.88 mi. Elsmere-Dunnsmoor Rd., SH 8346, 1859 Pts. 1 and 2, RC 49-56, Clinton Co., from Louis Longhi & Son, Glens Falls, **$124,819** est. $137,000***; h.conc. 2.23 mi. Horseheads-Montour Falls, S.H. 5208, RD 49056, Chemung Co., from Driscoll-Meade Corp., Geneva, **$57,511** est. $63,000***; h. conc. 4.75 mi. Grand Island State Parkway, (West River Parkway GISP 49-1, Erie Co., from Depew Paving Co., Inc., 4955 Broadway, Depew, **$1,281,615** est. $1,314,000***concrete slab asphalt concrete paving 5.16 mi. Hancock-Malden Rd., Proj. S-295 (4), FAS SH 49-10, Franklin Co., from Torrington Constr. Co., Inc., Torrington, Conn., **$515,748** est. $586,000*** h.conc. 7.38 mi. Lakeport-Oneida Lake Rd., SH 1022 and Bridgeport-Lakeport Rd., SH 952, RC 49-62, Madison Co., from Eastern Rock Products, Inc., 404 Court St., Utica, **$198,157** est. $274,000***h.conc. 1.23 mi. Onondaga Indian Reservation FC 49-1, Onondaga Co., from R. W. Husted, New Hartford, **$174,340** est. $190,000***h.conc. 1.86 mi. Brewster-Carmell Rd., SH 909, RC 49-58, Putnam Co., from Canaton Contractors, Inc., State Rd., Carmell, **$50,623** est. $52,000***h.conc. 1.1 mi. White Plains-Rye Lake Rd., SH 8226, RC 49-60, Westchester Co., from County Asphalt, Inc., 129 Main St., Tarrytown, **$55,433,** est. $57,000, CD 5-18—ENR 5-26.

N. Y., Kew Gardens—President Queens Boro, 120-55 Queens Blvd., Zone 15, storm sewer improvements, New York Blvd., 26 St. and Jamaica Ave., Proj. 8 SAR 3-49, Manh., Proj. S-44-49. Approx. $40,000. Plans deposit $5. CD 5-26. H. B. Bray, engr.

Ariz., Apache, \$247,114. Proj. 9 ENR 5-26

†Oregon—Feb. Roads Admin., Broadway and Oak Bldg., Portland, May 24, surf. treat. 2.2 mi. Klamath Lakeview Hy., Klamath Co., from F. L. Somers, 3111 Wocus St., Klamath Falls, \$174,723. CD 5-12.

†Oregon—(2 Rds. Admin., Broadway and Oak Bldg., Portland, May 24, surf. treat. 2.2 mi. Oregon Coast Hy., Proj. 20 D2, Ellensburg Co., from Leonard & Slate, 2305 S. W. 40th St., Portland, \$377,133. CD 5-12.

South Dakota—State Hy. Comm., Pierre, May 24, base course 11.502 mi. Proj. S 131 (5) and S 133 (5), Lawrence Co., from Peter Kiewit Sons' Co., 1024 Omaha Natl. Bank Bldg., Omaha, Neb. \$113,477. CD 5-11.

Tenn., Jackson—Madison Co. E. C. Rogers, engr., May 27, road and bridge bdrys. from Alamo Constr. Co., Alamo, \$104,171. CD 5-6—ENR 5-12.

Texas—State Hy. Comm., Austin, rejected bids May 24, flexible base, pr. mx. and single asph. surf. tr. 5.559 mi. Hy. FM 566—S 1158 (4), Chambers Co., L. B. \$143,934. CD 5-27—ENR 6-2, under LB.

Tex., Seymour—City, City Hall, rejected bids May 16, improv., paving streets, curb, curbgutters, storm sewers, L. B. \$119,050. Est. \$110,000. CD 5-25—ENR 6-2, under LB.

†Washington—Public Rds. Admin., Broadway-Oak Bldg., Portland, Ore., May 24, clearing, grubbing, grading, draining, 4.7 mi. Republic-Kettle Falls Hy., Proj. 20-K, Ferry Co., from Roy L. Blair & Co., 1220 Ide St., Spokane, \$210,036. CD 5-12.

Wisconsin—State Hy. Comm., Helena, May 27, c. conc. 1.122 mi. Watertown and Fond du Lac Sts., city of Waupun, State Hy. 26, Contr. Proj. U 010 (7) and U 010-1 (9), Dodge and Fond du Lac Counties, from Vinton Constr. Co., 718 N. Water St., Manitowoc, \$208,692. Bids 5-27. CD 5-13—ENR 5-19.

†Wyoming—Pub. Roads Admin., New Customhouse, Denver, Colo., May 25, 5.549 mi. road improv., Wyoming Projects 5-A11 and C-A and B combination, Hoback Canyon and Star Valley, Teton Co., from Peter Kiewit Sons Co., 1024 Omaha National Bank Bldg., Neb. \$417,326. CD 5-10—ENR 5-19.

●British Columbia—Province of British Columbia, Parliament Bldgs., Victoria, May 23, re-building 15 mi. Southern Trans-Provincial Hy., Rock Creek to Osoyoos, from W. C. Arnett & Co. Ltd., Princeton, \$1,115,496*** reconstr. Pritchard sect., Trans-Canada Hy., from Premier Constr. Co., Pritchard, \$98,098 ***reconstr. Trans Canada Hy. from Cherry Creek to Cornwall Lodge, from Maxwell Constr. Co. Ltd. 410 Seymour St., Vancouver, \$315,826***rebuilding Cariboo Rd., from 100 Mile House to Lac La Hache, from Dawson, Wark & Co. Ltd., 222 Clard Bldg., Vancouver, \$633,754***rebuilding approx. 5 mi. Southern Trans-Provincial Hy. between Rock Creek and Osoyoos, from P. F. Law Constr. Co., Weston, ont., \$314,546. CD 5-16—ENR 5-19.

CONTRACTS AWARDED

†Idaho—P. Rds. Admin., 609½ Bannock St., Boise, 6 conc. 16 mi. Idaho City-Stanley Hy., Boise National Forest, Proj. 25-B2-P1, 61, Boise Co., to Standley & Ehlen, 2901 Main St., Boise, \$153,620. CD 5-26.

Idaho—State Hy. Dpt., Boise, road bed drainage structures, 3 bridges, roadmix bit. surf. 7.293 mi. Firth-Shelly Rd., Brigham Co., to Sewell Constr. Co., Twin Falls, \$133,811. Est. \$168,755. Awarded 6-2.

Kansas—State Hy. Dpt., Dodge City, base and double asph. surf. tr. 9.349 mi., S. P. 282-29 F 428 (10), Ford Co., to Southwest Sand & Gravel Co., Dodge City, \$140,097. CD 5-18—ENR 5-26.

Kansas—State Hy. Dpt., Eureka, base, and double asph. surf. tr. 9.577 mi., 99-57 F 222 Pt. 2, Greenwood Co., to Storms-Frew Constr. Co., 666 E 37 St., Kansas City, Mo., \$251,979; base and light type surf. detour 5.722 mi., S. P. 257-1 (16), Pt. 1, Coffey Co., to M. W. Watson, National Bank of Topeka Bldg., Topeka, \$185,047. Bids 5-24. CD 5-9—ENR 5-12.

Kansas—State Hy. Dpt., Kansas City, c. conc. 0.641 mi. S. P. 24-52 FI 476 (18), Leavenworth Co., and c. conc. 1.941 mi. S. P. 4-161 FI 476 (16), Wyandotte Co., to Harrison Eng. & Constr. Corp., 4638 Mill Creek St., Kansas City, Mo., \$57,516 and \$177,038 respectively. Bids 5-26. CD 5-9—ENR 5-12.

Miss., Jackson—City, street paving, to I. S. Reed, Barnett-Madden Bldg., \$167,827. Bids 5-28. CD 5-6—ENR 5-12.

Nevada—State Hy. Dpt., Carson City, impv. 7.667 mi. portion State Hy. Sys. from 6 mi. east of Miller's to Tonopah, Nye and Esmeralda Counties, to Dodge Constr. Co., Inc., Fallon, \$214,849. Bids 5-26. CD 5-19—ENR 5-26.

N. M., Hobbs—City, City Hall, 129,408 sq. yd. street paving and 14,000 lin. ft. 12- to 54-in. storm sewer, appurtenances, to Allison & Haney, 1412 N. Broadway, Albuquerque, \$665,000. Bids 5-31, awarded 6-2. CD 5-18.

O., Cleveland—Comrs., Cuyahoga Co. Courthouse, Lakeside and Ontario Sts., b. conc. base course in center strip and b. conc. surf. 52-ft. wide roadway in Garfield Heights, to Wm. L. Schloss Paving Co., 3494 Lee Rd., Shaker Heights, \$108,553. Est. \$134,000. Albert S. Porter, Standard Bldg., engr. CD 11-12-43—ENR 11-18-43.

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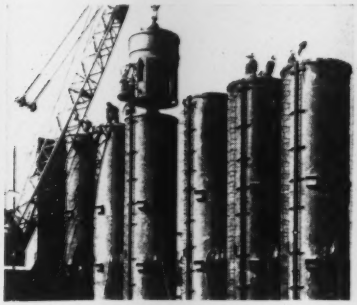

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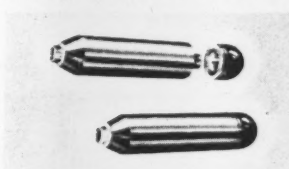

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O., Elyria—Lorain Co., Court House, resurf. stone on the Lafayette Sect., French Creek Sect., Brownhelm and other roads. Aggregate No. 34 and 46, to H. J. Hart, Elyria Bank Bldg., Elyria. **$154,500.** Est. $159,316. Bids 5/25. CD 5/20.

South Dakota—State Hy. Comm., Pierre, bit. surf. and base course (unprs.) 12.951 mi. F 171 (4), Marshall Co. to McCarty Bros., St. Clouis, Minn., **$152,966*****base course 7.125 mi. Proj. F 265 (6), and base course 12.878 mi. Proj. F 265 (9), both Tps. 126 N., Rgs. 61 W., Johnson, 337 Insurance Exchange Bldg., Sioux City, Ia. **$86,700** and **$134,882** respectively***bit. surf. 7.988 mi. Proj. F 73 (7), Campbell Co. to J. L. Healy Constr. Co., 206 Western Ave., Sioux Falls. **$128,307.** Grand total $839,850. Bids 5/24. CD 5/11.

Tex., Houston—Bert Wheeler & Assoc., 8380 Main St., street construction and asph. paving, south of 9th Ridge—Main St., own forces. **$110,000.** D 5/18—ENR 5/25.

†Alaska—Pub Roads Admin., Juneau, grading, surfacing and lmg. Kenai River Hy. and construction of bridge with reinforcem. superstructure on treated pile bents near Cooper's Landing. **$185,000.** Bids 5/23. CD 5/9—ENR 5/12.

Manitoba—Province of Manitoba, Winnipeg, stabilized gravl. base course, bit. plant mix 9.5 mi. Westbourne, to Evans Constr. Co. Ltd., Saskatoon, Sask. **$271,752;** c. conc. 13.7 mi. Minnedosa to Bravant Bros. Ltd., Morris. **$156,859.** Bids 4/22. CD 4/11.

EARTHWORK, WATERWAYS

BIDS ASKED

June 21

†Conn., New Haven—U. S. Eng., Army Base, Boston, 10 Mass., submarine rock removal ledge rock 2,000 cu. yd. New Haven Harbor. CD 6/9/44—ENR 6/29/44, under Connecticut.

†Illinois—U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, Riverfront Levee in Coal Creek Drainage and Levee Dist., Schuyler Co., Serial No. Eng., 11-032-49-103. CD 5/4.

†Iowa—U. S. Eng., Clock Tower Bldg., Rock Island, Ill., dam and appurtenances, Stage I, Coralville Reservoir, Iowa River, Johnson Co., Serial No. Eng., 1-117-49-75. CD 4/26—ENR 4/28.

†Kansas—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., Levee Unit 482-R, on right bank of Missouri River, from approx. mile 479.4 to approx. mile 485.9, Doniphan Co., Serial No. Eng. 23-028-49-219. CD 5/20.

†Minnesota—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul, Zone 1, Reconstruct. apron and gates, Pine River Dam, Headwaters Mississippi River. CD 5/27.

†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, Latrobe Flood Protection Proj., Loyalhanna Creek, Latrobe Serial No. Eng-36-058-49-137.

June 22

†Connecticut—U. S. Eng. Army Base, Boston, 10, Mass., Mansfield Hollow Lake, Channel Improvement, No. Eng. 19-016-49-92. Extended date. CD 5/13—ENR 5/26.

†Pennsylvania—U. S. Eng., P. O. Box 1715, Baltimore 3, Md., rehabilitation channel structures, Cohens Creek, York. Serial No. Eng-18-020-49-70.

June 23

†Conn., Greenwich—U. S. Eng., Army Base, Boston, 10, Mass., dredging 276,000 cu. yd. Greenwich Harbor. CD 6/9/44—ENR 6/29/44, under Connecticut.

†Conn., Norwalk—U. S. Eng., Army Base, Boston, 10, Mass., dredging 144,000 cu. yd. Norwalk Harbor. CD 6/9/44—ENR 6/29/44, under Connecticut.

†Conn., Stamford—U. S. Eng., Army Base, Boston, 10, Mass., dredging 90,000 cu. yd. Stamford Harbor. CD 6/9/44—ENR 6/29/44, under Connecticut.

†Georgia—U. S. Eng., Post Office Bldg., Savannah, engagement, exten Macon Levee, Macon, Serial No. Eng-09-133-49-192. Extended date. CD 5/13.

June 24

†Colorado—Bureau Reclamation, Dpt. Interior, M-W Straus, contr., Bldg. 1-A, Denver Federal Center, Denver, earthwork, concrete lining, conc. and structures for Horsetooth supply canal, 37.4 miles, Pinelands Sect. 23 plus 50 to Horsetooth Feeder Canal, Station 53 plus 50 to Station 67 plus 52 and access road from 3 mi. West of Loveland. Spec. 2684. Lump sum engr. adv. ENR 6/22.

†Florida—U. S. Eng., P. O. Box 4970, Jacksonville, rational development on Ortona Lock and Dam Reservation on Caloosahatchee River to Lake Okeechobee and Lake Okeechobee Drainage Area. Serial No. Eng-08-123-49-162. D 6/6/44—ENR 6/29/44.

†Md., Cumberland—P. Wks., office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 24, Va., earth work, drainage, pav. for roads, etc., at fire control and paving Naval Reserve Training Center. Spec. 21206. Plans deposit $10. Extended date. CD 11/17—ENR 11/27.

†New York—U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa., Portville Flood Protection Proj., Unit 1, Allegheny River, Portville, Serial No. Eng-36-058-49-135. CD 5/31.

†North Dakota—U. S. Eng., 1217 U. S. Post Office and Customs House, St. Paul 1, Minn., Baldhill Dam, Stage 3, embankment closure sect., Sheyenne River, placing compacted earthfill embankment, protection stone, top soil and appurtenant work at Baldhill Dam site, Sheyenne River, near Valley City. Serial No. Eng-21-018-49-92. CD 5/11—ENR 5/18.

†West Virginia—U. S. Eng., Madison Ave. and S. St. W., Huntington, Zone 18, Local Protection Proj., Point Pleasant, Sect. 7, Serial No. Eng. 16-022-49-152. Extended date. CD 5/9.

June 27

†Connecticut—U. S. Eng., Army Base, Boston, 10, Mass., dredging 150,000 cu. yd. Thames River. CD 6/9/44—ENR 6/29/44.

June 28

†Arizona—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing del. f. o. b. cars shipping point or f. o. b. cars Yuma, Ariz., alternating current unit power factor and 0.8 power factor synchronous motors, for Wellton Mohawk Pumping Plants 1, 2 and 3, Gila Proj., Spec. 2675. L. N. McClellan, engr.

†Arizona—Bureau Reclamation, Dpt. Interior, Yuma, Ariz., earthwork, structures, Wellton-Mohawk Check and Turnout, Gila Gravity Main Canal, Station 0 plus 00 to Station 96 plus 00, earthwork, concrete canal lining, structures, Wellton-Mohawk Canal, Station 1 plus 84.43 to Station 449 plus 00, Spec. 2688. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., engr.

†Arkansas and Mississippi—U. S. Eng., P. O. Box 97, Memphis 1, Tenn., placing approx. 57,500 squares 5 in. uncompacted asph. pavement on previously graded banks of Mississippi River, between Memphis, Tenn., and mouth of White River (Mile 583 AHP). Serial No. Eng-40-041-49-150.

Calif., Long Beach—City Harbor Dpt., 1333 El Embarkadero St., 44 circular sheet steel pile cells, 62 ft. diam., 418,600 tons rock and sand. Approx $500,000. Plans deposit $10.

†Idaho—Bureau Reclamation, Dpt. Interior, Boise, drilling test holes Palisades outlet works, power plant, Palisades Dam, approx. 56 mi. southeast of Idaho Falls, Spec. RI-47.

Pennsylvania—Dpt. Forests & Waters, 404 Education Bldg. Harrisburg, Tamaqua Desilting Basin on Little Schuylkill River below South Tamaqua as part of Schuylkill Desilting Proj., Schuylkill Co. **$500,000.** Plans deposit $15. Schuylkill River Project Engineers, 20 S. 15 St., Phila., engrs.

†Tennessee—U. S. Eng., P. O. Box 97, Memphis, Zone 1, Parcel I, approx. 12,000 squares paving, at Island 38, Missouri (Mile 816 AHP) on right bank of river, approx. 6 mi. south of Caruthersville; Parcel II, approx. 2,300 squares paving, at Bend of Island 14 (Mile 862 AHP), on left bank of river approx. 2 mi. west of Ridgley; Parcel III, approx. 2,800 squares paving, at below Dorena Towhead (Mile 885 AHP), on left bank of river approx. 7 mi. north of Tiptonville. Serial No. Eng-40-041-49-148.

June 29

†N. D., Grand Forks—Bureau of Mines, Interior Bldg., E. St., between 18 and 19 Sts. N.W. Wash. 25, D. C., lignite research laboratory, $750,000. Wells & Hornbeck, Grand Forks, archts. CD 9/23—ENR 10/14.

LOW BIDDERS

†Arkansas—U. S. Eng., P. O. Box 97, Memphis, 1, Tenn., May 24, placing approx. 830,000 cu. yd. earthwork, Stations 177 plus 11 and 181 plus 40, Porter Lake, Item R-701, Lower St. Francis Levee Dist., Crittenden Co., Serial No. Eng-40-041-49-129. From The Ace Mining & Constr. Co., Little Rock. **$188,742.** CD 4/29—ENR 5/19.

†California—U. S. Eng., 74 New Montgomery St., San Francisco, May 26, dredging channel in Napa River between Mare Island Strait and Napa, Spec. 2649. From Hydraulic Dredging, Ltd., Central Bank Bldg., Oakland, **$761,010.** CD 5/18.

†Illinois—U. S. Eng., 826 U. S. Court House and Custom House, 1114 Market St., St. Louis, 1, Mo., May 26, levees, Columbia Drainage and Levee Dist., Proj. Item II-A, Monroe Co., Serial No. Eng. 23-065-49-126, from Chappell Constr. Co., Vineland, **$133,055.** Est. $109,720. CD 5/12—ENR 5/19.

***†Kentucky**—U. S. Eng., 203 U. S. Court House, Nashville, 3, Tenn., May 25, clearing segments, Group 4, Wolf Creek Reservoir, Cumberland River. Serial No. Eng. 40-058-49-83, Item 3, clearing Sub Unit 4A, from Cookeville Clearing Co., Cookeville, Tenn., **$593,900** est. $535,000, from Clearing Sub Unit 5A, from Nello L. Teer Co., Durham, N. C., **$657,710** est. $555,000. CD 5/17—ENR 5/25.

†Louisiana—U. S. Eng., foot Prytania St., New Orleans, Zone 9, May 24, approx. 3,925 lb. ft. standard board revetment, Red River, Rossler Parish. Serial No. 16-047-49-300, from Hough & Cougar & Co., Inc., 320 N. Fourth St., St. Louis, Mo., **$195,500.** CD 5/10—ENR 5/12.

†Louisiana—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, June 1, approx. 270,000 cu. yd. semi-compacted earthwork, Red River Back Water Levees, Concordia Parish. Serial No. Eng-16-407-49-309, from Kissner Constr. Co., Church Point. **$143,840.** CD 5/18—ENR 5/26.

†Nebraska—U. S. Eng., 601 Davidson Bldg., Kansas City, S. Mo., June 3, constructing Levee Unit 513-512 R, Sect. II along left bank of Missouri River and both banks of Nemaha River south of Rulo. Serial No. Eng-03-028-49-199, from Francis R. Orshek, Inc., 515 Stephens National Bank Bldg., Fremont, **$635,320.** Est. $488,223.

†Oregon—U. S. Eng., Pittock Block, Portland, Zone 5, May 27, clearing, logging and stockpiling timber within Detroit Dam reservoir area, Serial No. Eng. 35-026-49-513, from E. L. Gates & Co., Roseburg, **$128,230.** CD 5/13—ENR 5/19.

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, May 27, dredging 2,956,400 cu. yd. from lower end Morgan Point to mouth of Goose Creek Channel, Harris Co., Inv. No. Eng-41-243-49-294, from Anchor Gulf & Bay Co., 15 Park Row, New York, N. Y., **$531,385.** Est. $439,141. CD 5/11—ENR 5/19.

CONTRACTS AWARDED

❂Georgia and South Carolina—U. S. Eng., Post Office Bldg., Savannah, Ga., furnishing, del. alternating current generators, 44,444 kva Savannah River Basin, Savannah River, Clark Hill Proj., Serial No. Eng-09-133-49-165, to General Electric Co., 18 Spring St., N.W., Atlanta, 3, Ga. **$6,696,125.**

†Nebraska and Kansas—Bureau Reclamation, Dpt. Interior, Superior, earthwork, canal lining and structures for Superior Canal, Station 10 plus 00 to 659 plus 50, Pawnee Lake and Superior-Courtland Diversion Channel and intercepting drains, Spec. 2598, Missouri River Basin Proj., Rostwick Unit, to Knisley-Moore Co., Douglas, Wyo., **$597,615.** Bids 4/14, awarded 5/25. CD 4/22—ENR 4/28, under LB.

†Nebraska—U. S. Eng., 601 Davidson Bldg., Kansas City, Zone 6, Mo., levees along both banks of Nemaha River, approx. 4 mi. south of Rulo. Serial No. Eng-23-028-49-191, to Francis R. Orshek, 515 Stephens National Bank Bldg., Fremont, **$671,155.** Bids 5/11. CD 5/17—ENR 5/19.

AIRPORTS AND AIRBASES

BIDS ASKED

About June 21

†S. C., Congaree—CRASH TRUCK STATION—U. S. Eng., Post Office Bldg., Savannah, Ga., crash truck station, Congaree Air Base. Plans deposit $10.

June 21

†S. C., Congaree—AIR BASE BLDGS.—U. S. Eng., Post Office Bldgs., Savannah, Ga., repairing, altering 11 bldgs. at Congaree Air Base, Serial No. Eng-09-133-49-197. CD 5/19—ENR 5/26.

About June 22

†Pa., Coraopolis—HANGAR—U. S. Eng., First and Douglas Sts., N.W., Wash. 25, D. C., steel hangar at Greater Pittsburgh Airport. Plans deposit $20.

June 22

†N. C., Charlotte—AIRFIELD—U. S. Eng., Post Office Bldg., Savannah, Ga., repair, modernization facilities for Air National Guard at Morris Field. Serial No. Eng-09-133-49-195. CD 5/2—ENR 5/26.

June 23

†Mass., Squantum—SPRINKLER SYSTEM—At office H. L. Mathews, Officer in Charge of Construction, First Naval Dist. Headquarters, 495 Summer St., Boston, installing automatic sprinkler systems and misc. fire alarm connections at U. S. Naval Air Station, Spec. 22866. Plans deposit $10.

June 24

†Va. Norfolk—SALVAGE BLDG.—Pub. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Zone 11, aircraft salvage bldg. at Naval Air Station, Spec. 22604. Plans deposit $10.

June 28

†Calif., Point Mugu—RUNWAY, etc.—At office of Officer in Charge of Construction, U. S. Naval Air Missile Test Center, runway, taxiway, and paved areas at U. S. Naval Air Missile Test Center, Spec. 22867, for Yards & Docks Annex, Navy Dpt., Arlington, Va. Plans deposit $50.

June 29

N. Y., Idlewild—WIRING, etc.—At Office Ch. Engr., The Port of New York Authority, 111 Eighth Ave., New York, Zone 11 furnishing, installing wiring and equip. for power and communications at Idlewild New York International Airport, Contr. NYA-29. Plans deposit $25. CD 4/27/44—ENR 5/18/44.

June 30

N. J., Newark—RUNWAY, etc.—At office ch. engr. The Port of New York Authority, 11 Eighth Ave., New York, Zone 11, N. Y., furnishing, placing fill for runways, taxiways at Newark Airport, Contr. NA-14. Plans deposit $25.

LOW BIDDERS

†Ga., Marietta—WAREHOUSE—U. S. Eng., Post Office Bldg., Savannah, May 23, warehouse, Marietta Air Force Base from Hartman Constr. Co., 833 Memorial Dr., S. E., Atlanta. **$147,494.** CD 5/11—ENR 5/19.

Mass., Fall River—AIRPORT IMPRVS.—City Mayor's Office, City Hall, rejected bids May 22, for grading airport impvs. CD 5/9.

Tex., Tyler—AIRPORT TERMINAL—City, City Hall. May 26, airport terminal, from W. W. Walton, 1112 S. Fenton St. **$155,408.** Est. $100,000. CD 5/4—ENR 5/12.

CONTRACTS AWARDED

Ga., Atlanta—REPAIRING RUNWAYS—City, repairing runways at Municipal Airport, to MacDougald-Warren, Inc., Northside Dr., N. W., **$137,941.** CD 6/28/45—ENR 7/12/45.

●†Md., Andrews Field—Wash. 25, D. C.—HOUSING—U. S. Engr., 1 and Douglas Sts., N.W., Wash. 25, D. C., 164 unit brick veneer type, concrete sidewalks, curb & gutter, mechanical ventilation incl. exterior work, heating plant addn., steam distr. sys. and underground telephone distr. sys., Andrews Air Force Base, to John A. Johnson & Sons, Inc., 815 National Press Bldg., Wash., D. C. **$1,507,181.** CD 6/9, under Lib.

†Canal Zone—DRAINAGE FACILITIES—U. S. Engr., Box 2043, Ancon, Canal Zone, drainage facilities improv., Albrook Air Force Base, 17N, 96-404-49-18, to Isthmian Construction, Inc., P. O. Box 2015, Curundu **$252,489.**

PUBLIC BUILDINGS

BIDS ASKED

June 21

†Ga., Augusta—U. S. Naval Charleston Naval Base, Charleston, S. C., Naval Reserve Training Center, incl. altering bldg. and constr. access passage ways and sidewalks, NOY 18588, Spec. 22385. Plans deposit $10.

●Ill., Chicago—State of Illinois, Dpt. P. Wks. & Bldgs., Springfield, 8 story, reinforced steel, brick, tuberculosis hospital, $5,000,000. C. Herrick Hammond, Springfield, state archt. Philip B. Maher, 157 E. Erie St., assoc archt. CD 2/1—ENR 3/3.

N. Y., Moravia—Bd. Educ., Central School Dist. Moravia, Junior and Senior High School, $460,000. Wallace P. Beardsley, Seward Bldg., Auburn, archt. CD 9/27/46—ENR 10/17/46.

†N. C., Asheville—C. O. Reinhardt, officer in Charge Construction, P. O. Box 365, Naval Base, Charleston, S. C., bldg. addn. to Naval Reserve Training Center, incl. altering bldg., concrete and masonry constr. for Yards & Docks Annex, Navy Dpt., Arlington, Va., NOY 18590, Spec. 22388. Plans deposit $10.

†S. C., Charleston—Com. C. O. Reinhardt, officer in charge of construction, P. O. Box 365, Naval Base, concrete, masonry bldg. addn. to Naval Reserve Training Center, incl. altering existing bldg., grading, top soiling and seeding NOY 18567, Spec. 22385, for Yards & Docks Annex, Navy Dpt., Arlington, Va. Plans deposit $10.

†S. C., Columbia—Com. C. O. Reinhardt, officer in charge construction, P. O. Box 365, Naval Base, Charleston, concrete, masonry bldg. addn. to Naval Reserve Training Center, and existing bldg. alterations, NOY 18593, Spec. 22387, for Yards & Docks Annex, Navy Dpt., Arlington, Va. Plans deposit $10.

About June 22

Conn., Wilton—Town, Nelson Hurlbutt, chm. Bldg. Comm., Town Hall, 2 story, basmt., brick, steel, concrete block school, Route 7. $400,000. Extended date. O'Connor & Kilham, Jr., 101 Park Ave., New York, N. Y., archts. Seelye, Stevenson & Value, 101 Park Ave., New York, N. Y., engrs. CD 6/3—ENR 6/9.

June 22

†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, construct Public Sanitary Bldg., appurtenant work, Tionesta Dam, Serial No. Eng-36-058-49-138.

†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, demolishes dwellings, put-up sanitary bldg., storage bldg. and appurtenant work, Youghiogheny Dam, Somerset Co., Serial No. Eng-36-058-49-140.

June 23

Ind., Jasper—Jasper Memorial Hospital Bd. Dir. Hugo Melchior, chm., Jasper, 3 story, brick, stone, steel, reinforced, county hospital,

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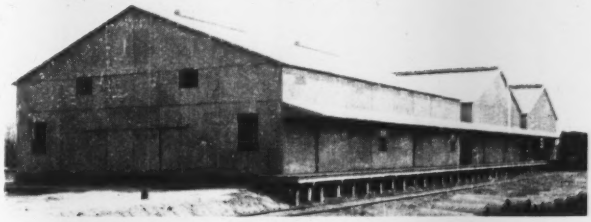

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$500,000. Plans deposit $15. Walter Scholar & Assoc., 1114 State St., Lafayette, archts. CD 9/24—ENR 10/14.

†N. J., Trenton—Yards & Docks Annex, Navy Dpt., Arlington, Va., shop wing, water supply and boiler plant, Spec. No. 22628. Plans deposit $100.

†New York—U. S. Eng., P. O. Box 1715, Baltimore 3, Md., operator's residence and garage and shop bldg., Almond Dam, Steuben Co., Serial No. Eng-18-020-49-65. CD 5/13—ENR 5/19.

†N. Y., Elmira—U. S. Eng., 120 Wall St., New York, Zone 5, lodge and utility bldgs. at Woodlawn Natl. Cemetery.

†N. Y., Hornell—U. S. Eng., 24 St. and Maryland Aves., Baltimore 3, Md., garage and shop bldg. at Almond Dam site.

June 24

La., New Orleans—U. S. Naval Station, Algiers, Naval Reserve Training Center, Lake Front, Spec. 22678. Plans deposit $20. Dreyfous & Seifferth, Audubon Bldg., archts. Miller & Pollizo, 512 Audubon Bldg., engrs.

Ga., Camilla—Mitchell County Hospital Auth., c/o Albany Architects & Engineers, archts., 200½ Broad Ave., Albany, nurses home.

†Ky., Richmond—U. S. Eng., 830 W. Broadway, Louisville, Zone 3, ammunition disassembly plant, Bluegrass Ordnance Depot. Serial No. Eng-15-028-49-167. $50,000. Plans deposit $15.

June 24

Miss., Prentiss—Jefferson Davis Co., Prentiss, hospital. Plans deposit $25. Chris Risher, 109 Vise Bldg., Meridian, archt. CD 11/24/47—ENR 12/11/47.

Neb., Fremont—City, c/o Bd. P. Wks., office Dpt. Utilities, power piping for municipal power plant, $160,000. Plans deposit $20. Lutz & May, 819 Finance Bldg., Kansas City, Mo., engrs.

†N. M., Albuquerque—U. S. Eng., P. O. Box 1758, Albuquerque, Sandia Base, EOP-941. Serial No. Eng-29-005-49-105. CD 5/25—ENR 6/3.

N. C., Burlington—Alamance Co. Hospital, Burlington, hospital, Eric Flannagan, McColl Bldg., Henderson, archt. CD 5/19—ENR 5/26.

†Ohio—U. S. Eng., Engineers Park, Buffalo 7, New York, Cleveland, storehouse and pier repairs, Cleveland Harbor, Serial No. Eng-to-023-49-24.

†Ore., Portland—Veterans Admin., Munitions Bldg., Wash., 25, D. C., boilers in Boiler House Bldg., 13 for Veterans Admin. Hospital. CD 10/15/47—ENR 10/30/47.

June 27

Fla., Chattahoochee—State Improvt. Comm., Tallahassee, general hospital addn., at State Hospital. Plans deposit $25. Guy C. Fulton Assoc., Peabody Hall, University of Florida, Gainesville, archts. CD 5/19—ENR 6/9.

June 28

Fla., Quincy—Gadsden Co., Quincy, 60 bed hospital. Plans deposit $50. Robert & Co. Assoc., 96 Poplar St. N.W., Atlanta, Ga., archts. CD 6/10/48—ENR 6/17/48.

Miss., Columbus—State Bldg. Comm., New Capitol Bldg., Jackson, classroom bldg., Mississippi College for Women. $315,000. CD 4/26 under LB.

Miss., State College—State Bldg. Comm., New Capitol Bldg., Jackson, engineering bldg., Mississippi State College. $500,000. CD 1/12/48—ENR 1/22/48.

†Montana—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars at Circle, two 115,000 volt, 600 ampere, 3 pole, single throw, horizontal-upright pole-top mounting, manually-gang-operated outdoor horn-gap switches with manually-gang-operated grounding blades, McCone Co. Electric Cooperative substation (Circle substation), Fresh Pond Proj., Spec. 2677. L. N. McClellan, ch. engr.

Tex., College Station—Agricultural and Mechanical College of Texas, College Station, masonry science bldg., $480,000. Plans deposit $25. Carlton W. Adams, 228 Admin. Bldg., archt. CD 10/6/47—ENR 10/16/47.

Tex., Greggton—Bd. Educ., Joseph T. Org, supt., Greggton, 1 story masonry Pine Tree School. $300,000. Plans deposit $25. Preston M. Geren, 905 N. P. Anderson Bldg., Fort Worth, archt. CD 2/11—ENR 3/17.

Wash., Fort Steilacoom—State Dpt. Pub. Institutions, Olympia, completing male ward bldg. at Western State Hospital, Spec. 8270. $270,000. Plans deposit $35. A. G. Lumm, Rust Bldg., Tacoma, archt. CD 6/31/47—ENR 8/21/47.

July 6

●**Calif., Soledad**—State Div. Architecture, P. Wks., Bldg., Sacramento, rein.-conc. medium security prison, with steel, sash and doors, hollow concrete block, steel bar partitions, 434,000 sq. ft. floor area. $9,527,000. Plans deposit $200. Anson Boyd, Sacramento, state archt. CD 3/14/46—ENR 6/13/46.

●**N. Y., Rome**—Bd. Educ., N. George St., Junior High and Elementary School. $3,000,000. Plans deposit $100. Extended date. Starrett, Van Vleck & Reginald Marsh, 101 Park Ave., New York, Zone 17, archts. CD 6/2—ENR 6/9.

LOW BIDDERS

●**Calif., Los Angeles**—Bd. Supervs. Los Angeles Co., 501 Hall of Records, June 7, psychopathic unit of General Hospital, from Stubbin Read Co., 816 W. 5 St., **$1,610,729**. CD 5/10—ENR 5/12.

Colo., Denver—City and Denver Co. School Dist. 1, 414 14 St., June 1, general contract 2 story, bsmnt., 70x256 ft., and one end of T 112 ft., 19 classroom University Park School addn. from Morris Constr. Co., 330 W. Asbury St. **$411,500.** CD 5/11—ENR 5/19.

Colo., Denver—City and Denver Co., School Dist. 1, 414 14 St., May 25, general contract 2 story, part bsmnt., approx 148x263 ft. L-shaped Palmer Grade School E. 9 and Grape Sts. from A. A. & E. H. Jones, 682 Wyandot St. **$108,306.** CD 5/10—ENR 5/12.

Conn., Stratford—Town, Harry B. Flood, mgr., Town Hall, May 27, 1500 person capacity brick, steel gymnasium, incl. basketball court, etc., North Parade, King and Essex Sts., from Frouse Constr. Co., Inc., 74 Goodsell St., Bridgeport. **$424,000.** CD 5/10—ENR 5/12.

●**Idaho, Pocatello**—Bannock Co., Courthouse, June 3, 1, 3 and 6 story, bsmnt., rein.-con. hospital, from C. H. Sorrells, Pocatello. **$1,197,-210,** est. $900,000. CD 5/10—ENR 5/12.

Md., Baltimore—Housing Authority of Baltimore, 709 E. Eager St., Gilmore Homes, Perkins Homes, O'Donnell Heights and Somerset Projects, from Charles R. Seivener Co., 339 St. Paul Pl. **$612,982.** Lucius R. White, Jr., 10 W. Chase St., archt. CD 5/21/45—ENR 5/31/45.

Mass., Norfolk—Commonwealth of Mass., Dpt. P. Health, State House, Boston, rejected bids Apr. 29, nurses home, Contract 1, Pondville State Hospital, L. B. **$486,023.** Will readvertise. CD 5/13—ENR 5/19.

Miss., Sumner—West Tallahatchie, Special High School Dist., May 27, high school, from M. T. Reed Constr. Co., 162 Millsaps Ave., Jackson. **$419,373.** CD 5/17—ENR 5/19.

♦**N. J., Dover**—U. S. Eng., 120 Wall St., New York 5, N. Y., high explosive bldg. at Picatinny Arsenal, Schedule 1, roads and outside utilities, from Terminal Constr. Corp., 194 Hackensack St., Wood Ridge. **$291,135;** Schedule 2, bldgs. and ramps, from Arthur Venneri Co., 2 Ave. N., E. Westfield. **$302,936.** CD 4/28—ENR 5/12.

●**N. Y., Long Island City**—New York City Housing Auth., 63 Park Row, New York, Zone 7, June 8, general contract Sect. 1, consisting boiler house and 11 numbered 1 to 17 inclusive of Ravenswood Homes, Proj. NYC-20 in area bounded by 34 Ave., 24 St., 36 Ave. and 21 St., from Paul Tishman Co., Inc., 595 Madison Ave., New York, Zone 22. **$5,844,000** ***heating and plumbing, from Caruso-Sturcey Corp., 10 Fisk Pl., Mt. Vernon. **$770,000**** electrical work, from Spitzer Electric Co., 420 Lexington Ave., New York, Zone 17. **$344,000** ***plumbing, from Novak & Brenner, Inc., 623 Tenth Ave., New York, Zone 19. **$735,700.** CD 6/3.

N. D., Fargo—Bd. Educ., Fargo, May 27, Junior High School, from Meinecke-Johnson Co., Fargo. **$771,000.** CD 5/19.

Okla., Norman—E. R. Kraettli, secy. University of Oklahoma, Norman, returned unopened bids to have been opened May 25, 3 story bsmnt. geology bldg., $400,000. Will re-advertise. CD 5/12—ENR 5/19.

Tex., Longview—Gregg Co., Earl Sharp, judge, Courthouse, May 25, general contract county memorial hospital from J. A. Sharrock & Sons, Marshall. **$182,000.** CD 5/3—ENR 5/5.

♦**Va., Warrenton**—U. S. Eng., First & Douglas Sts., N. C., Wash., D. C., May 26, family quarters at Vint Hill Farms, Inv. No. 49-080-124-(29) M. from William T. Lyons, Tower Bldg., Baltimore, Md. **$431,-115.** CD 5/11—ENR 5/19.

CONTRACTS AWARDED

Calif., Berkeley—Bd. Regents University of California, Berkeley, general contract 4 story partial 70,000 sq. ft. and 2 story partial rein.-con. physics bldg. addn., to Parker, Steffens & Pearce, 185 S. Park St., San Francisco. **$716,800.** Bids 5/18. CD 5/24—ENR 5/26, under LB.

Ill., Woodstock—Rural Community School Dist. 10, Woodstock, Oak Grove School and Greenwood School, 1 story, brick each to Chell & Anderson, 176 W. Adams St., Chicago. **$497,-770.** Perkins & Will, 309 W. Jackson St., Chicago, archts.

N. Y., Port Chester—Port Chester Housing Auth., City Hall, housing facilities, to Lapsus Romeo & Assoc., Tuckahoe. **$437,680.** CD 3/15—ENR 3/17.

●**N. Y., Rockaway**—New York City Housing Auth., 63 Park Row, New York, Zone 7, general contract Arverne Houses, Proj. No. NYC-18 in area bounded by Rockaway Beach and Arverne Blvds., Beach 56 St., Beach Channel Dr. and Beach 54 St., Queens Boro, to F. J. Carlin & P. T. Cox Co., 101 Park Ave., New York, Zone 17. **$2,635,000.** Bids 4/12. CD 5/15—ENR 4/21, under LB.

O., Norwood (Br. Cincinnati)—Town Bd. Educ., Harold Bates, supt. Administration Bldg., Williams Ave., general contract technical school, to Meyer-Hecht Co., 2824 Stanton St., Cincinnati. **$114,157.** Bids 4/21, awarded 4 22. CD 4 13—ENR 4 28.

Pa., Ardmore—Lower Merion Twp. School Dist., Ardmore, general contract cafeteria bldg., to Frank V. Warren, Inc., 225 S. 15 St., Phila., **$416,000.** Bids 5/23. CD 5/12—ENR 5/19.

Tenn., Johnson City—Memorial Hospital Assn., Johnson City, hospital, to James E. Green Constr. Co., Johnson City. **$895,600.** Bids 5/24. CD 6/2, under LB.

●**Tex., Huntsville**—State Prison Bd., State of Texas, Austin, rein.-con., masonry, steel individual cell block bldg., concrete slab pier fdn., Approx. **$1,000,000;** metal and woodworking shop, **$146,800,** fierce account. CD 10/1—ENR 10/28.

Utah, Brigham City—Box Elder School Bd., Brigham City, general contract Central School, to M. Morgan & Sons, 259 Harrisville Rd., Ogden. **$438,518.** Bids 5/23. CD 4.11—ENR 4/21, under LB.

B. C., Ruskin—British Columbia Electric Co., 425 Carrall St., Vancouver, power plant addn., third unit, 47,000 hp. capacity, to Northern Constr. Co., & J. W. Stewart Ltd., 736 Granville St., Vancouver. **$750,000.** CD 3/3—ENR 3/17.

Ont., Kingstown—Canadian Commercial Corp., 70 Lyon St., Ottawa, 3 story, bsmnt., stone U-shaped 217 ft. long dormitory Royal Military College, to M. Sullivan & Son, Ltd., 234 Elgin St., Armprior. Approx. **$880,000.** G. Brault, Dpt. P. Wks., Ottawa, archt.

Ont., Peterborough—Peterborough Civic Hospital, E. A. Outram, city clk., 3 story, steel, concrete, brick nurses home, to A. W. Robertson Ltd., 57 Bloor St. W., Toronto. Approx. **$437,200.** Bids 5/25. CD 5/11—ENR 5/19.

COMMERCIAL BUILDINGS

BIDS ASKED

June 30

Calif., Los Angeles—Temple Israel of Hollywood, 7300 Hollywood Blvd., (selected list bidders) 3 story, temple religious education bldg. and chapel wing, approx. $250,000. Samuel Landreth, 400 Rowan Bldg., archts.

SOON LETS CONTRACT

Wash., Pullman—Pullman Community Hospital Assn., c/o Funk, Molander & Johnson, archts., South 7 Wall St., Spokane, soon lets contract 5 story, masonry, concrete Finch Memorial Hospital addn. **$340,000.** Extended date. CD 5/9—ENR 5/26.

LOW BIDDERS

La., Lake Charles—Mullers Department Store, Lake Charles, May 28, 4 story department store addn. from T. Miller & Sons, P. O. Box 821, Lake Charles. **$460,389.** CD 5/10—ENR 5/12.

●**O., Cleveland**—St. Ann's Maternity Hospital, 3409 Woodland Ave., rejected bids May 9, general contracting, plumbing, heating, and elevator hospital. **$2,300,000.** CD 5/11—ENR 5/19.

CONTRACTS AWARDED

●**Calif., Los Angeles**—North Encino Homes, 5443 Sunset Blvd., 227 frame, stucco dwellings. Owner builds. **$2,000,000.**

Calif., Los Angeles—L. Sirota, 7242 De Celis Pl., 100 three and four room frame, stucco dwellings. Owner builds. **$400,000.**

Calif., Monterey Park—Lakeside Homes Inc., 2894 Ronona Ave., Los Angeles, 62 frame, stucco dwellings. Owner builds. **$430,-000.** Wm. Bray, 5670 Wilshire Blvd., Los Angeles, archt.

Calif., Oxnard—Oxnard Community Developers, Oxnard, 75 frame, stucco dwellings. Owner builds. **$450,000.** James R. Friend, 556 W. 5 St., San Pedro, archt.

Calif., Pico—Southwest Olympic Homes, 407 Commercial St., Beverly Hills, 91 frame, stucco dwellings, to United Western Builders, Inc., 407 Commercial St., Beverly Hills, approx. **$455,000.**

●**Calif., Santa Monica**—St. Johns Hospital, Inc., 1328 22 St., 7 story, rein.-con. hospital addn. to Pozzo Constr. Co., 2403 Riverside Dr., Los Angeles, Approx. **$1,300,000.** Bids 5/28, awarded 6/7. CD 5/12—ENR 5/19.

Calif., Walnut Creek—Heraty & Gannon, 3625 MacArthur Blvd., Oakland, 100 residences, Walnut Creek. Approx. **$500,000.** CD 3/3/48—ENR 3/11/48.

Fla., North Miami—F-31, Inc., c/o contractor, 84 homes, to Gaines Constr. Co., 3211 N.W. 27 Ave., Miami. **$420,000.**

Fla., North Miami—F-30, Inc., c/o contractor, 34 homes, to Albert Constr. Co., 3140 N. Miami Ave., Miami. Approx. **$500,000.**

Ill., East St. Louis—Holy Angels Catholic Parish, Rev. Father Wm. J. Trombley, pastor, 3722 Caseyville Ave., 1 story, bsmnt., brick, concrete, stone church, sanctuary, etc., 37 St. and Caseyville Ave., to Wm. H. & Nelson Cunliff Co., 1020 Lindell Blvd., St. Louis 3, Mo. Approx. **$400,000.**

Ind., Anderson—Albert Pick Hotels Co., 20 N. Wacker Dr., Chicago, Ill., completing interior Tower Hotel, 11 and Jackson Sts., to William P. Jungclaus Co., Massachusetts Ave., Indianapolis. Approx. **$675,000.**

La., New Iberia—Francis J. Voorhries, c/o contractor, 200 homes, to Fred J. Olivier Constr. Co., 14 Iberia St. Approx. **$600,000.**

Neb., Grand Island—The Sisters of St. Francis Hospital, Grand Island, nurses home, to Mauer Constr. Co., Grand Island. **$573,280.** Bids 4/22. CD 5/2—ENR 5/5.

●**Nev., Las Vegas**—Harry Domina & Mel Schroeder, Frontier Hldrs., Las Vegas, frame, stucco residences in 40 acre tract bounded by E. Owens Ave., E. Tonopah and N. 5 Sts., North Las Vegas. Owner builds. **$3,520,000.** CD 5/20—ENR 6/2.

N. Y., Bay Shore—Marvin Constr. Co., c/o Carl V. Lana, archt., 30 W. Lane, 2 story, 162x 265 ft. store and office, Main St. and Fourth Ave., to Fred T. Levy & Co. Inc., 30 W. 40 St., New York. F. W. Woolworth Co., Woolworth Bldg., New York, lessee for store.

N. Y., Bellerose—Post Gardens, Inc., c/o A. H. Salkowitz, archt., 37-60 82 St., Jackson Heights, 59 houses on 6 acre site between 80 and 81 Aves. and 258 and 260 Sts. Owner builds. **$600,000.** CD 2/10—ENR 3/3.

N. Y., Rego Park—Certified Queens Homes, c/o Sterling M. Palm, archt., 35-79 159 St., Flushing, 5 apartments, 110 St. between 62 Dr. and 63 Ave. Owner builds. **$475,000.** CD 1/19—ENR 2/3.

N. Y., Springfield—Springfield Estates, Inc., c/o S. H. Klein, archt., 90-04 161 St., Jamaica, 61 two family houses, 137 Ave., 222 St., 136 and 135 Aves., and 223 St. Owner builds. **$558,700.** CD 2/2—ENR 2/17.

O., Cleveland—Ray and Henry Burscino, 3986 W. 143 St., eighty-six 1 story, frame houses, Bernice Ave., separate contracts. **$739,-600.**

Pa., Haverford—Wallace & Warner, 1400 S. Penn. Square, Phila., shopping center and super market, 279-385 Lancaster Ave., separate contracts. **$500,000.** CD 2/1—ENR 2/10.

Pa., Landsdowne—Joseph M. Dallon, 44 S. Lansdowne Ave., apartment, Lansdowne Ave. and Scottdale Rd., separate contracts. Approx. **$500,000.** George S. Edell, 117 S. 17 St., Phila., archt. CD 4/26—ENR 5/19.

Pa., Phila.—Hyman Korman, 6033 Castor Ave., residential development, Robbins Ave. west of Everett St. and Elbridge St. east of Everett St., **$250,000;** residential development Levick St. west of Horrocks St., **$260,000,** separate contracts.

S. C., Spartanburg—Schuyler Apartments, Inc., c/o contractor, apartment development, to P. S. Cecil Constr. Co., Spartanburg. **$750,000.**

Tenn., Memphis—Gerbers Dpt. Store, c/o contractor, remodeling department store, to Fred J. Sexton & Co., Commerce Title Bldg. Approx. **$500,000.**

Tex., Bellaire—Homecrafters, Inc., c/o Edward M. Hovas, 324 Hughes St., Houston, 30 brick veneer dwellings, concrete slab fdn., Bell Haven, to F. L. Woods, Jr., 713 Aurora St., Houston. Approx. **$550,000.** CD 1/4—ENR 1/20.

Tex., Ft. Worth—Ridglea Housing Corp., 6300 Camp Bowie Blvd., 73 frame dwelling, Ridglea West Addn. Owner builds. **$425,000.**

Tex., Houston—S. N. Adams, 4001 Westheimer St., community center. Owner builds. **$650,000.** CD 6/3.

Tex., Houston—Brace & Carruth, 1087 W. 41 St., addnl. housing, Sect 6, Oak Forrest. Owner builds. Approx. **$400,000.** CD 6/6.

Tex., Houston—W. Edward Brown & Assoc., 3628 Locke Lane, 100 dwellings between N. Shepherd and Hy. 75. Own forces. **$450,000.** CD 11/29/48—ENR 12/9/48.

Tex., Houston—Curtis Collins, 7411 Kingsley Dr., 50 dwellings, Pecan Vitals sub-division. Owner builds. **$450,000.** CD 5/27.

Tex., Houston—Kelly & Kelly, 4120 Graustark St., 20 dwellings, 3100 block Bluebonnet. Owner builds. Approx. **$400,000.** CD 5/27—ENR 6/16.

Tex., Houston—Plantation Development Co., 1810 Travis St., 100 addnl. dwellings, Chocolate Bayou and Holmes Rds. Owner builds. **$600,-000.** CD 5/26.

Tex., Houston—Robertson Constr. Co., c/o Lum Terrace, addnl. housing, concrete slab fdns., Kay Circle. Owner builds. **$425,000.** CD 5/27.

Tex., Pasadena—Charles R. Olds & Assoc., 3425 University St., Houston, to duplexes, 3925 Ave. tract. Owner builds. **$400,000.** CD 4/8—ENR 4/21.

Va., Norfolk—Roman Catholic Diocese of Richmond, Diocese Offices, Richmond, Norfolk Catholic High School, to Virginia Eng. Co., Newport News. **$551,200.** Bids 5/2, awarded 5/25. CD 5/20—ENR 5/26.

Va., Roanoke—Brandon Homes Corp., c/o contractor, 37 homes, to Leon R. Kytchen, Brandon Rd. Approx. **$250,000.**

W. Va., Parkersburg—Sears, Roebuck & Co., c/o contractor, remodeling department store, to Plate Constr. Co., Parkersburg. Approx. **$450,000.**

●**Que., Montreal**—G. Proulx & Brothers, 1070 Belleville St., 125 Cottages. Owner builds. **$1,125,000.**

INDUSTRIAL BUILDINGS

CONTRACTS AWARDED

Ala., Gorgas—PLANT—Commonwealth & Southern Corp., c/o contractor, steam electric plant, Unit 6 for Alabama Power Co., to Hardaway Contg. Co., 15 11 St., Columbus, Ga. Approx. **$300,000.** CD 5/3—ENR 5/12.

Ill., Chicago—FACTORY and WAREHOUSE—Fairbanks Morse & Co., 600 S. Michigan St., 1 story, 145x251 ft., brick, steel factory and warehouse, 1544-58 S. State St., to Fallon O'Donavan & Bassas, 4616 Prairie Ave. **$350,000.** A. Epstein & Sons Co., 2011 W. Pershing Rd., Zone 9, archts. Bids 5/11, awarded 5/24. CD 5/4—ENR 5/12.

N. J., Denville—FACTORY—Alexander Summer, Inc., 790 Queen Anne Rd., Teaneck, factory, to Joseph Muscarelle, 42 First St., Hackensack. Approx. **$400,000.** General Box Co. of Chicago, 500 N. Dearborn St., Chicago, Ill., lessee.

●**Tex., Houston** — WAREHOUSE — Katy Park Industrial Development Corp., Joe B. Salmon, pres., c/o 1st Natl. Bank Bldg., 10 story 3,000,000 sq. ft. floor space; masonry, steel warehouse, built in multiple units, to O'Rourke Constr. Co., 4013 Kochler St., Approx. **$18,000,000.** CD 5/23—ENR 6/2.

Tex., Houston—WAREHOUSE and GARAGE —National Steel Products Co., 1901 Franklin St., warehouse and garage, to Hubbard Constr. Co., 1507 Delano St. **$824,000.** Bids 4/18., CD 5/31.

Tex., Stinnett — PLANT — Stacey - Dresser Engr. Div. (Dresser Interests), 1900 Superior St., Cleveland, O., desulfo plant, own forces. **$375,000.** CD 3/30—ENR 4/7.

Va., Norfolk — PLANT — J. H. Miles & Co., Inc., Ft. Southampton Ave., design and construction oyster packing plant, 2 and 3 story brick, steel, plus 2 piers, 250 ft. long concrete on wooden piles to E. T. Gresham Co. Inc., 1038 W. 26 St., Approx. **$500,000,** incl. equip.

UNCLASSIFIED

BIDS ASKED

June 21

†**Ga., Savannah**—MOORING FACILITIES—U. S. Navy, Charleston Naval Base, Charleston, S. C., addnl. mooring facilities at Naval Reserve Training Center, NOY 18291, Spec. 22109. Plans deposit $10.

Missouri — RURAL DISTRIBUTION LINES Lewis County Rural Electric Co-operative, B. L. Anderson, pres., Lewiston, 171.6 mi. rural distr. lines, Adair, Clark, Knox, Lewis, Marion, Scotland and Shelby Counties, Proj. Missouri 23M, Lewis. Plans deposit $25. Drazen & Assoc., 8135 Forsyth Blvd., Clayton, St. Louis, Zone 24, engrs. Bids May 24 rejected. CD 5/10—ENR 5/19.

LOW BIDDERS

June 22

Que., St. Jean Port Joli—WHARF—J. M. Somerville secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf reconstruction, Approx. $75,000. Plans deposit $25. R. Blais, c/o owner, engr.

Ga., Cordele—PARK INPRVS—State Dpt. Parks, State Capitol, Atlanta, elevated water tank, tower and watermains at Lake Blackshear State Park. Plans deposit $10.

P. E. I., Charlottetown—WHARF—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf reconstruction and imprv. Approx. $350,000. Plans deposit $50. R. Blais, c/o owner, engr.

About June 24

†**Tex., Fort San Houston**—CEMETERY IMPRVS.—U. S. Eng. 606 Santa Fe Bldg., Galveston, modification road facilities, Fort Sam Houston National Cemetery, Inv. No. Eng-41-243-49-337.

June 24

Ga., Augusta—SWIMMING POOL, etc.—City, Allen Park Swimming Pool, Bath House and equip. Plans deposit $25 for s. imming pool and bath house and $15 for equip. Extended date. E. Lynn Drummond & Leyland, Robertson, 921 Green St., archts. CD 4/26—ENR 5/5.

Mass., Plymouth—COMFORT STATIONS—Commonwealth of Mass., Div. Parks & Recreation, 504 15 Ashburton Pl., Boston, 2 comfort stations, Myles Standish State Forest, one south of Fearings Pond Rd., other Fearings Pond Camping area. Plans deposit $5.

†**Oregon**—DISTRIBUTION SYSTEM—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., exten. 7,200-12,470 wyevolt, 3 phase, 4 wire, electrical distr. sys. at McNary, Umatilla Co. Eng.-45-064-49-114.

†**Va., Quantico**—ELECTRIC SERVICE—Pub. Wks. Office, Marine Corps Schools, Quantico, exten. underground electric service at Naval Hospital, Spec. 21713. Plans deposit $10.

June 28

La., Kentwood—NATURAL GAS SYSTEM—Town, Town Hall, natural gas sys. Porter, Barry & Switzer, 211 S. Main St., Baton Rouge, engrs. CD 5/9—ENR 5/26.

La., Lake Charles—ARENA—Louisiana State University, c/o Dunn & Quinn, archts., 827 Hodges St., live stock arena addns., alterations at John McNeese Junior College, $150,000. Plans deposit $20. CD 5/13—ENR 6/2.

La., Roseland—NATURAL GAS SYSTEM—Town, Town Hall, natural gas sys. Porter, Barry & Switzer, 211 S. Main St., Baton Rouge, engrs.

SOON LETS CONTRACT

British Columbia—RAILWAY—Minister P. Wks., Parliament Bldg., Victoria, soon lets contract clearing right-of-way 14 mi. railway exten. from Quesnel to Cottonwood River, for Pacific Great Eastern Railway Co., C. Spencer, pres., Parliament Bldg., Victoria, $750,000. CD 4/15/47—ENR 5/1/47.

LOW BIDDERS

†**Arizona and Nevada** — SUB-STATION — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., May 24, Schedule C1, substation for Electric Dist. 2 substation and Schedule C2, substation of Electric District 4 substation, both Davis Dam Proj., Spec. 262s, from Allis-Chalmers Mfg. Co., Continental Oil Bldg., Denver, Colo., **$166,344** and **$166,344** respectively.

Calif., Los Angeles—PARK GYMNASIUM, etc.—Bd. Supervs. Los Angeles Co., 501 Hall of Records, May 31, Will Rogers Memorial Park gymnasium and community bldg., from Row Constr. Co., 1965 Newport Ave., Pasadena, **$107,775.** CD 5/12—ENR 5/19.

Calif., Los Angeles—PLAYGROUND BUILDINGS—City Bd. Recreation and Parks, City Hall, June 3, reinforced brick clubhouse bldgs. at Pacoima, Pacific Palisades Van Ness, Normandy, Rosecranz Playgrounds, from Manderback Constr. Co., 1537 Victory Blvd., Glendale, **$320,184.** CD 5/23.

North Dakota — RURAL DISTRIBUTION LINES—Mor-Gran-Sou Electric Co-operative, Flasher, rejected bids May 19, 249.44 mi. rural distr. lines, Morton Co. CD 5/12.

North Dakota — RURAL DISTRIBUTION LINES — Mountrail Electric Co-operative, Stanley, May 26, 264 mi. rural distr. lines from Arvig Bros. Constr. Co., Wadena, Minn., **$261,677.** CD 5/12—ENR 5/19.

Oklahoma—RURAL DISTRIBUTION LINES —Kiwash Electric Co-operative, Cordell, rejected bids May 21, 106 mi. rural distr. lines, incl. Sect. T with Sect. N, Washita Co., LB, **$140,222.** Est. $125,000. CD 5/31—ENR 6/2, under LB.

†**Oregon**—RAILROAD RELOCATION—U. S. Eng., Pittock Block, Portland, Zone 5, May 13, Southern Pacific R.R. relocation, Lookout Point Dam (Meridian Site) Middle Fork Willamette River, Eng-35-026-49-469, from The Utah Constr. Co., 1 Montgomery St., San Francisco, Calif. **$837,295.** Est. $898,205. CD 4/13—ENR 4/21.

†**Pa., Philla.**—LIGHTING, etc.—U. S. Dpt. of Army, Frankford Arsenal, Bridesburg, Philla., May 26, lighting and power sys., from H. B. Frazer & Co., 250 N. 11 St. **$275,250.**

South Dakota — RURAL DISTRIBUTION LINES — Cam-Wal Electric Co-operative, Selby, May 26, Soc. C2 and C3, 402 mi. rural distr. lines, Walworth Co., from Zontelli Bros., Ironton, Minn., **$375,870** and **$367,008** respectively. CD 4/21—ENR 5/12.

South Dakota — RURAL DISTRIBUTION LINES—Rosebud Electric Assn., Winner, May 24, 243 mi. rural distr. lines, Tripp Co., from Determan & Sons, Melrose, Minn., **$254,775.** CD 5/12.

†**Tenn., Oak Ridge**—GAS DISTRIBUTION—United States Atomic Energy Comm., P. O. Box 365, cancelled bids to have been opened June 23, gas distr. sys., existing permanent area. Inv. No. 401-49-33 A. CD 6/3—ENR 6/9.

Texas — RURAL DISTRIBUTION LINES — Kimble Electric Co-operative, Junction, May 26, 210 mi. rural distr. lines, Kimble Co., from Wm. Alsup & Assoc., Barnett-Madden Bldg., Jackson, Miss. **$166,000.** CD 5/10—ENR 5/19.

Texas — RURAL DISTRIBUTION LINES — Rio Grande Electric Co-operative, Brackett-

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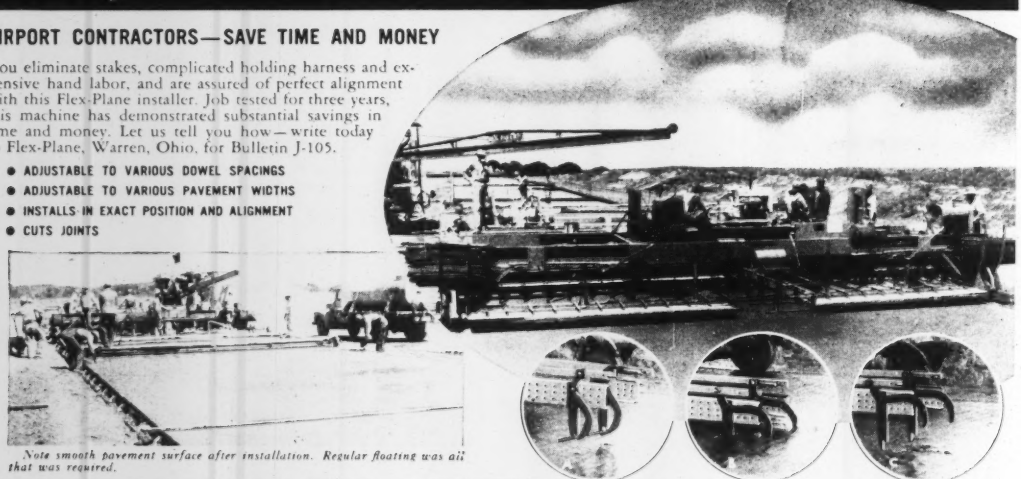

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ville, June 1. 320 mi. kv. rural distr. lines, Val Verde, Edwards and Kinney Counties, from Taylor Constr. Co., P. O. Box 472, Taylor. **$319,670.** Est. $288,000. CD 5/18—ENR 5/26.

CONTRACTS AWARDED

Alabama—RURAL DISTRIBUTION LINES—Franklin Electric Co-operative, Russellville, May 18, 138.1 mi. primary lines, 12.9 mi. secondaries and 1.7 mi. services rural distr. lines, in north half of Franklin Co. with small portion in southern part of Colbert Co., to Trans Electric Co., c/o Ladd Eng. Co., engr., 209 Wood Bldg., Ft. Payne. **$194,720.** Bids 5/18, awarded 5/28. CD 5/5—ENR 5/12.

Ala., Graysville — GAS SYSTEM — Town, natural gas sys., to P. O. Buchanan Constr. Co., 630 Woodland Ave., Birmingham. **$379,971.** Bids 6/3.

Arkansas—RURAL DISTRIBUTION LINES—Carroll Electric Co-operative, Berryville, approx. 178 mi. rural distr. lines, Carroll and Newton Counties and vicinity, to Walco Eng. & Constr. Co., 2408 E. 4 Pl., Tulsa, Okla., **$110,434.** CD 4/5—ENR 4/14.

Arkansas—RURAL DISTRIBUTION LINES—Clay County Electric Co-operative Corp., Corning, 130 mi. rural distr. lines, **$188,000;** 166 mi. rural distr. lines sys. imprvs., **$160,000;** rural distr. lines imprvs., etc., **$615,000,** Clay Co., own forces. CD 3/18.

Calif., San Francisco—MUSEUM—Dpt. P., Wks., City Hall, M. H. de Young Museum alterations at Golden Gate Park, to Monson Bros., 475 6 St., San Francisco, **$183,784.** Dodge A. Riedy, city archt. CD 11/13/47—ENR 11/27/47.

Iowa—RURAL DISTRIBUTION LINES—Chariton Valley Electric Co-operative, Albia, addnl. rural distr. lines, Monroe Co., force account, **$320,000.** Brown Eng. Co., 326 K. P. Bldg., Des Moines, engr. CD 4/5—ENR 4/28.

Ia., Dubuque—DRIVE-IN THEATRE—Tri-States Theatre Corp., G. Ralph Branton, genl. mgr., 800 Paramount Bldg., drive-in theatre, 15 acre site, Hy. 386 near Sagerville Rd., separate contracts. Approx. **$100,000.** CD 3/25—ENR 4/7.

Kan., Kansas City—PARKING LOTS—City, City Hall, Parking Lots 7 and 8 to Union Constr. Co., 1401 Fairfax Trafficway, **$204,423.** Bids 5/19. Truman Schlup, 1401 Fairfax Trafficway, engr.

N. Y., Long Island City—BLOCK SIGNALS, etc—Bd. Transportation, 250 Hudson St., New York. Zone 13, block signals and telephone changes at Queensboro Plaza Station, to Watson-Flagg Eng. Co., 140 Cedar St., New York, Zone 6. **$267,750.**

●**N. Y., New York**—SWITCHGEAR, etc—Bd. Transportation, 250 Hudson St., Zone 13, 11 kv. switchgear and associated equip. for 59 St. Power Plant of IRT, to General Electric Co., 570 Lexington Ave., Zone 22. **$1,777,936.**

North Carolina—RACING TRACK—Carolina-Virginia Racing Assn., c/o Aycock Brown, Pub. Relations asst., New Bern, Curr-tuck Greyhound Track, incl. parking areas, grandstand, etc. between Moyock and Virginia State Line, to Virginia Eng. Corp., 7101 Newport Ave., Norfolk, Va. **$550,000.**

†**Oregon**—RAILROAD RELOCATION—U. S. Eng., Pittock Block, Portland, Zone 5, relocation sect. Southern Pacific R. R., Sect. of State Hy. 58, 2.5 mi. from vicinity of Lookout Point (Meridian) Dam, Serial No. Eng. 35-028-49-469, to Utah Constr. Co., 1 Montgomery St., San Francisco, Calif., **$837,295.** Est. $898-295. Bids 5/13, awarded 5/27. CD 5/18—ENR 5/26, under LB.

S. C., Columbia—STEAM DISTRIBUTION SYSTEM—Bd. Regents, S. C. State Hospital, steam distr. sys., to Walker Plumbing & Heating Co., 721 Lady St., **$55,500.** Bids 4/7. CD 3/26.

●**Tennessee**—PIPELINE—East Tennessee Natural Gas Co., c/o contractor, 170 mi. 22 in. natural gas pipe from Greenbrier to Oak Ridge, to Oman Constr. Co., Acklen Park, Nashville, Approx. **$10,000,000.** CD 6/6—ENR 6/9, under LB.

†**Tennessee**—ELECTRICAL EQUIPMENT—C. S. Eng., 303 U. S. Court House, Nashville, Zone 3, Tenn., accessory electrical equip., Center Hill Power Plant, Caney Fork River, Schedules 1, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12, Serial No. Eng-40-058-48-69, to Westinghouse Electric Co., Union Bank Bldg., Pittsburgh, Pa. **$758,174.** Bids 3/22, awarded 4/27. CD 2/28—ENR 3/10.

Texas—RAIL REPLACEMENT—Cotton Belt Railway Co., Tyler, replacing steel rails between Tyler and Corsicana, force account. **$325,000.**

Texas — RAIL REPLACEMENT — Southern Pacific Railway Lines, H. J. McKenzie, ch. engr., Union Station, Houston, replacing steel rails, between Hearne and Ennis, force account **$100,000.** CD 5/20—ENR 6/2.

Tex., Pasadena—STADIUM—Pasadena Independent School Dist., Pasadena, 7,300 seating capacity stadium, to John Dollinger, Live Oak and 7 Sts., Beaumont, **$88,810;** day labor, subcontracts, **$68,000.** Bids 5/17. CD 5/20—ENR 5/26.

Tex., Pearland—STADIUM—Pearland Independent School Dist., Pearland, stadium, folding bleacher, to Williams Constr. Co., 2310 N. Wayside St., Houston, **$100,000.** C. H. Stautz, 1704 Exposition Blvd., Austin, archt.

Tex., San Antonio—STREET LIGHTING—City Public Service Bd., 201 N. St. Marys St., Unit 2, street lighting, Purchase and Hire. **$100,000.** CD 11/11—ENR 11/25.

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CONSTRUCTION REPORTS—Third Section

WATER SUPPLY

BIDS ASKED

June 24

Ark., Wynne—City, Harold N. Fails, mayor, City Hall, water distr. imprvs., incl. 29,460 lin. ft. 4- to 18-in. Class 150 c.i. pipe, fittings, 56 valves with boxes, 36 fire hydrants, etc. Plans deposit $25. Marion L. Crist & Assoc., Union Life Bldg., Little Rock, engrs. CD 6/10—ENR 6/16.

Ore., The Dalles—The Dalles Water Comn., City Hall, water filtration plant. Plans deposit $50. G. D. Hall, Larson Bldg., Yakima, Wash., engr.

June 28

Kan., Leoti—City, A. M. Askey, clk., City Hall. WW sys. extens., incl. 14,250 lin. ft. 2- to 6-in. c.i. pipe, 21 valves, 15 fire hydrants, railroad crossing, etc. Plans deposit $5. Wilson & Co., 223 N. Santa Fe St., Salina, engrs.

Tex., Houston—Texas Medical Center, Hermann Med. Professional Bldg., c.i. waterlines. $30,000. F. J. Niven, 3308 Main St., consult. engr. H. A. Kipp, 1200 Prof. Bldg. Medical Center, consult. engr.

Ont., Renfrew—Town, L. R. Barrand, clk., main filter plant, reservoir, low lift pumphouse, intake, forcemains, etc. Approx. $85,000. Proctor, Redfern & Laughlin, 11 Jordan St., Toronto, engrs. CD 12/27/48.

July 1

Tex., Tyler—City, Lake Tyler raw water transmission pipeline, appurtenances. Approx. $260,000. Plans deposit $25. T. C. Forrest, Jr., Proctorian Bldg., Dallas, engr. CD 4/19/47—ENR 4/24/47.

LOW BIDDERS

Calif., Healdsburg—City, City Hall, June 6, 1 m.g. rein.-con. water reservoir, from Wm. D. Kapp, 705 Bennett Ave., Santa Rosa, **$54,459.**

✝N. M., Albuquerque—U. S. Eng., P.O. Box 1538, June 3, water supply sys., Sandia Base, Stage III, Serial No. 291-49-101, from Chicago Bridge & Iron Co., Albuquerque, **$95,800.** Est. $100,000. CD 5/25—ENR 6/2.

CONTRACTS AWARDED

Calif., Whittier—City, 205 N. Greenleif Ave., concrete settling basin and water lines, to Wonderly Constr. Co., 2634 Luna Ave., Long Beach, **$30,255.** Bids 3/7, awarded 5/31. Roeding & Koebig, Rowan Bldg., Los Angeles, engrs.

Colo., Denver—Bd. Water Comn., City and County Bldg., Denver, installing 8,579 lin. ft. 36 and 42 in. water lines in Montview Blvd. from Kearney to Pontiac Sts. and in Montview Blvd. from Pontiac to Xanthia Sts., to Crocker & Ellett, Inc., 1863 Mazee St., **$53,981.** Bids 6/6, awarded 6/7. CD 6/1.

Que., Montreal—Municipality, gate valves for filtration plant, to Jenkins Bros. Ltd., 617 St. Remi St., **$304,810.** Bids 5/4. CD 5/14—ENR 4/28.

Que., St. Agapit—Town, A. Paquet, secy., Town Hall, water, sewer and fire protection sys., to Komo Constr. Ltd., 1500 St. Vallier St., Quebec City. Approx. **$120,000.** Bids 4/8. P. Warren, 165 Cote de la Montagne, Quebec City, engr. CD 4/4.

SEWERS, WASTE DISPOSAL

BIDS ASKED

June 21

O., Columbus—City, Elmer A. Keller, dir. Public Service, sewage treatment expan. sludge digestion facilities, $800,000. Plans deposit $25. Extended date Paul A. Uhlmann & Assoc., 1441 N. High St., engrs. CD 4/12—ENR 4/14.

June 28

La., Shreveport—City, City Hall, 26 and 30 in. conc. sanitary sewer force mains, 2 sewage lift pump. stations. CD 1/13—ENR 1/20.

Tex., Houston—Texas Medical Center, Hermann Med. Professional Bldg., sanitary sewer lines. $50,000. F. J. Niven, 3308 Main St., consult. engr. H. A. Kipp, 1200 Prof. Bldg. Medical Center, consult. engr.

June 30

Tex., Hillsboro — City, sewage treatment plant. $60,000. Extended date. F. J. Von Zuben, 1606 Mistletoe Blvd., Fort Worth, engr. CD 5/26—ENR 5/5.

July 5

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, 4.48 mi. 8- to 18-in. clay sanitary sewers in Roosevelt Ave., Altadena, $117,500. C. E. Arnold, co. engr. CD 5/16—ENR 6/9.

Wis., Cudahy—At office James F. Keller, city clk., Cudahy, repairing and or reconstructing 4,117 lin. ft. 24-to 48-in. combined sewer in S. Packard, E. Holmes and S. Kirkwood Aves., etc. Plans deposit $5.

July 6

California—State Div. Hys., P. Wks. Bldg., Sacramento, exten. 20.2 mi. drainage facilities between 0.5 mi. north of Lincoln and 1.5 mi. south of Marysville; Placer and Yuba Counties. G. T. Mc Coy, state hy. engr.

July 7

Wis., Milwaukee—Sewerage Comn. of City of Milwaukee, Jones Island, Zone 1, sewage treatment plant addns., No. 492, conveyor system for turbo dryers, No. 511 elevator for turbo dryer installation, No. 513, 143,000 cu. yds. excav. for tanks. Plans deposit $5 each. J. L. Fereger, ch. engr. CD 5/11—ENR 5/19.

LOW BIDDERS

Calif., San Diego—San Diego Co., Civic Center Bldg., June 6, sewage treatment plant, collection sys., Solano Beach, from J. W. Huntley & Drainage Constr. Co., 2020 Hyperion Ave., Los Angeles, **$335,365.** Est. $200,000. CD 5/12—ENR 5/26.

Calif., Sutter Creek—City, City Hall, June 6, sewage treatment plant addn. sewage collection sys., from O. R. Dahms Constr. Co., Rt. 7, Box 3858, Rio Linda, **$99,744.** CD 5/23—ENR 5/26.

Tex., Dallas—City, Earl Goforth, secy., City Hall, Main and Harwood Sts., Part 1 and 2, White Rock Valley 54 in. trunk sewer, from Whittle Constr. Co., 3102 Kings Rd., **$356,935.** Earl F. Hoefle, c/o owner, engr.

Tex., San Antonio—City, City Hall, June 9, Northside Main Sewer Proj., Sect. 1, Martinez Creek area, from Wahrmund-Logan Co., 422 Hays St., **$144,061.** Est. $159,800. CD 5/26—ENR 6/2.

CONTRACTS AWARDED

Calif., Redwood City—City, City Hall, sanitary sewers, storm sewerage sys., in Kensington Square, to Edwin & Tobin, 1060 Carleton St., Berkeley, **$75,738.** Awarded 6/6. Glenn M. Jain, City Hall, city engr.

Ia., Postville—City, City Hall, sewage treatment plant, to Gaskill Walton, Crete, Ill., **$95,978.** Bids 6/1, Awarded 6/8. Marr, Green & Oliver, 410 N. Michigan St., Chicago, Ill., engrs.

Tex., Fort Worth—City, W. O. Jones, mgr., City Hall, drainage, force account. **$85,000.** CD 2/4—ENR 2/13.

Que., St. Remi—Municipality, sewers, to G. G. L. Engrg. & Builders Ltd., 41 Hazelgrove St., Outremont, **$60,000.** Papineau & Frigon, 60 St. James St. W., Montreal, engrs.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

June 21
Iowa
Maryland
Ohio
West Virginia

June 22
Louisiana and Texas
Maine

June 24
Kentucky
Missouri
North Dakota

July 1
Pennsylvania

July 5
Maryland

July 6
California

July 7
New Jersey

July 12
Oklahoma

LOW BIDDERS

New Jersey—State Hy. Dpt., Trenton, June 9, Lexington and Walnut Ave. grade crossing eliminations over Lehigh Valley R. R., Cranford Twp., FAGCP 68 (1), Union Co., from Union Building & Constr. Corp., 631 Main Ave., Passaic **$254,743.** CD 5/3—ENR 5/26.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

June 21
Colorado
Iowa
Kansas
Maryland
Ohio
West Virginia

June 22
Rhode Island

June 24
Kansas
Kentucky
Missouri
North Dakota

June 27
Oregon

June 28
Oregon

June 29
Louisiana
About July 1
Arkansas

July 1
Pennsylvania

July 6
California

July 12
Oklahoma

June 23

✝Colorado—Pub. Rds. Admin., 254 New Customhouse, Denver.

Delta and Mesa Counties—4.28 mi. Cedaredge Mesa-Colo. Forest Proj. 13-A. Extended date. W. B. Matteson, div. engr. CD 6/8.

Fla., Jacksonville—City, City Hall, widen, repaving, 6 in. concrete parking strip with integral curb on Washington St. from north curb line of Duval St. to south curb line of Union St. etc. Capt. W. E. Sheddon, Engineers Bldg., city engr. CD 1/17/45—ENR 2/8/45.

✝N. M., Albuquerque—U. S. Eng., P. O. Box 1538, addnl. roads (EOP924B and EOP-919), Serial No. Eng-29-005-49-102. CD 5/25.

June 30

Tex., Fort Worth—City, W. O. Jones, mgr., approx. 100,000 sq. yd. 1½ in. hot mix. b. conc. on 12 streets. $70,000. Plans deposit $10. C. M. Thelin, dir. P. Wks. CD 10/11/45 — ENR 11/1/45.

July 6

Calif., San Carlos—City, City Hall, imprv. streets in Howard Park, Howard Park Map No. 2 and Sunset Highlands, approx. $50,000. Plans deposit $10. Edwin H. Smith, Chestnut St. and Bay Rd., Redwood City, engr.

LOW BIDDERS

Arizona—State Hy. Dpt., Phoenix, surf. 11¼ mi. Black Canyon Hy., Yavapai Co., from Orr & Orr Constr. Co., Phoenix, **$87,457.** W. C. Lefebvre, 17 Ave. and Jackson St., engr.

✝California—Pub. Rds. Admin., Phelan Bldg., San Francisco, June 7, by imprv. 3.298 mi. Calif. FH-90-B, Western Divide, Sequoia National Forest, Tulare Co., from Kirst & Sons, Inc., 836 W. Atlanta St., Altadena, **$606,726.** CD 5/24—ENR 5/26.

Calif., San Mateo—City, City Hall, June 6, imprv. Palm Ave. from 20 Ave. to E. 25 Ave. and 21 Ave. from El Camino Real to westerly line of Palm Ave., from L. C. Smith, 1 and Railroad Sts., **$57,937.**

Colorado—State Hy. Dpt., Denver, June 7, asph. surf. tr., 8.411 mi. State Hy. 51, from Wray City limits south, Colo. Proj. S-801 (2), Yuma Co., from Leone Constr. Co., Trinidad, **$116,911.** Est. $142,646. CD 6/2.

✝Colorado—Pub. Rds. Admin., 254 New Customhouse, Denver, June 8, imprv. 4.129 mi. Dolores-Rico, Colo. Forest Proj. 1-E1, Montezuma Co., from Western State Constr. Co., Inc., Hotchkiss, **$129,212.** CD 5/24—ENR 5/26.

●Illinois—State Hy. Dpt., Springfield, June 10, from Ackley Bros. Constr. Co., 211 State St., East St. Louis, c. conc. patching Illinois Rts. 16, 112, 140, 9, 10 and U. S. Rt. 67, Madison, Jersey and Macoupin Counties, **$131,115;** c. conc. patching, Illinois Rts. 127, 43 and U. S. Rt. 50 St. Clair and Clinton Counties, **$79,683;** c. conc. Illinois Rt. 3, 13, 157, 158, St. Clair and Monroe Counties, **$71,467*****from Whetzel Bros., 201 N. Walnut St., Champaign, c. conc. patching, Rts. U. S. 45 a. d. 150, Ill. Rt. 121, Champaign, Douglas, Moultrie, Piatt and Coles Counties, **$139,675;** c. conc. patching U. S. Rt. 51, and 36, Ill. Rt. 48, Macon, Moultrie, DeWitt, Piatt and Shelby Counties, **$154,520*****from General Paving Co., 30 E. John St., Champaign, c. conc. 2.47 mi. Ill. Rt. 339, Piatt Co., **$198,121*****from Jesse H. Freeman, Inc., 1608½ Fifth Ave., Moline, c. conc. 9.91 mi. Ill. Rt. 3, Rock Island, **$276,366*****from MacLair Asphalt Co., 600 Collinsville Rd., East St. Louis, bit. surf. 4.31 mi. Ill. Rt. 514, St. Clair Co., **$108,562*****from O'Connor Constr. Co., 614 Reisch Bldg., Springfield, c. conc. 6.95 mi. U. S. Rt. 66, Sangamon Co., **$666,076*****from Monmouth Stone Co., Monmouth, crushed stone surf. course 2.85 mi. Ill. Rt. 413, Warren Co., **$79,867*****from C. L. Jeffrey, Fairfield, gray, cr. crushed stone surf. course 6.76 mi. Ill. Rt. 796, Wayne Co., **$116,365*****from Zimmerly Constr. Co., 321 E. Edgar St., Paris, c. conc. patching U. S. Rts. 51, 40, Ill. Rts. 16, 121, Clark, Cumberland, and Shelby Counties, **$148,380*****from Frank C. Fentz Co., 901 Tenbroock St., Paris, gray, cr. crushed stone surf. course 3.19 mi. Ill. Rt. 889 Gallatin Co., **$101,666*****from J. W. Mehaffey Const. Co., 295 W. Main St., Ottawa, bit. surf. tr. gravel or crushed stone base course 8.01 mi. Ill. Rt. 355, Livingston Co., **$101,618*****from W. L. Miller, Elvaston, bit. surf. rt. on gravel or crushed stone base course, 6.82 mi. Ill. Rts. 441 and 446, McDonough Co., **$123,426*****from Madison Constr. Co., Box 222, Edwardsville, bit. surf. tr. 2.09 mi. Ill. Rt. 646, 4 steel I-beam bridges Montgomery and Shelby Counties, **$158,814*****, from Rockford Block Top Constr. Co., 1615 Westchester Dr., Rockford, gray, cr. crushed stone surf. course 4.1 mi. Ill. Rt. 579, Morgan Co., **$91,816.** CD 6/2.

N. J., Trenton—Mercer Co., Courthouse, resurf. 32 mi. roads, from Barrett Paving Co., 51 W. State St., **$67,736.**

Ore., Portland—Multnomah Co., Court House, oiling parts of Brooks-Kaiser, Kaiser, Johnson and Larch Mountain Rds., from K. E. Jacobsen & Co., 0445 S. W. Porter St., **$65,083.** George Huck, co. engr.

Tex., Houston—Harris Co., H. L. Washburn, aud., June 9, constructing asph. paving approach roads to Pasadena Tunnel, from Farnsworth & Chambers Co., Inc., P. O. Box 74, **$153,923.** Est. $200,000. Palmer & Baker, Jensen Arcade Bldg., Pasadena, engrs.

Tex., University Park—City, 3800 University St., Dallas, rejected bids June 6, asph. street paving. **$75,000.** CD 5/18—ENR 5/26.

CONTRACTS AWARDED

Ariz., Phoenix—City, wid'n. 9 block stretch E. McDowell Rd., to Arizona Sand & Rock, S. Seventh St., **$167,081.** R. Gail Bager, City Hall, city engr.

Conn., West Haven—Town, Bd. Selectmen, Town Hall, paving East, Kimberly and Second Aves., Elm and Thomas Sts., to C. W. Blakeslee & Sons, Inc., 58 Waverly St., New Haven, **$96,902.**

●Illinois—State Hy. Dpt., Springfield, c. conc. 1.14 mi. Illinois Rt. 172, substructure, erecting

structural steel railroad subway, Peoria Co., to Clark Bros., 309 S. Jefferson Ave., Peoria, **$613,015**; bit. surf., c. conc. wid'n. 1.24 mi. Illinois Rt. 88 and 1.35 mi. U. S. 150, Peoria Co., to S. M. H. Constr. Co., 1500 N. Adams St., Peoria, Zone 3, and Seneca Petroleum Co, 439 W. 33 St., Chicago, Zone 16, **$562,677.** Grand total $1,375,692. Bids 5/20, awarded 6/8. CD 5/24—ENR 5/26, under LB.

Kansas—State Hy. Dpt., Salina, pavement patching, wid'n., c. conc. 8.371 mi. S. P. 40-85 K 2208 (1) Saline Co., to J. H. Shears Sons, Inc., Hutchinson, **$187,113.** Bids 6/7. CD 5/18—ENR 5/26.

Kansas—State Hy. Dpt., Topeka, pavement patching, wid'n. c. conc. 5.861 mi. S. P. 69-46 K 1267 (1), Johnson Co., to Reno Constr. Co., Overland Park, **$171,456*****pavement wid'n. 10.355 mi. S. P. 24-89 K 1264 (1), Shawnee Co., to Kaw Paving Co., Inc., Crane and W. Topeka Sts., Topeka, **$108,620*****, conc. 3.508 mi. S. P. 75-89 F 106 (11) and c. conc. 1.267 mi. S. P. 75-89 F 99 (2), Shawnee Co., to Koss Constr. Co., Farm Bureau Bldg., Des Moines, Ia., **$575,128** and **$141,017** respectively. Grand total $996,221. Bids 6/3. CD 5/23—ENR 5/26.

Kansas—State Hy. Dpt., Wichita, grading 7.437 mi. S. P. 14-39 F 245 (6), Harper Co., to Cullen Bros., 1218 E. Second St., Pueblo, Colo., **$69,636**; pavement patching, wid'n. c. conc. 14.689 mi. S. P. 54-87 K 5151 (1), Sedgwick Co., to Kaw Paving Co., Inc., Crane and W. Topeka Aves., Topeka, **$349,611.** CD 5/13—ENR 5/19.

Pennsylvania—State Hy. Dpt., Harrisburg, imprv. farm-to-market roads, incl. constructing 35.53 mi. roads Adams, Beaver, Berks, Carbon, Chester, Cumberland, Delaware, Fayette Franklin, Juniata, Lancaster, Montgomery, Somerset, Washington and York Counties, and bridges Carbon, Delaware and Lancaster Counties, own forces. **$837,345.** E. L. Schmidt, c/o owner, ch. engr.

Wis., Shorewood—Village, grading, paving various streets, to N. Harris, 910 E. Wisconsin Ave., Milwaukee, Zone 2, **$51,991.** Bids 5/16. H. A. Schmitt, 3930 N. Murray Ave., Zone 11, village engr.

EARTHWORK, WATERWAYS

BIDS ASKED

June 20

N. J., Point Pleasant—Dpt. Conservation & Development, Div. Planning & Development, 520 E. State St., repairing, constructing creosoted bulkhead. Plans deposit $25.

June 22

†Michigan—U. S. Eng., 609 Federal Bldg., Detroit, Zone 31, excavation cut-off canal, concrete weir and appurtenant structures, vicinity Mount Clemens, Serial No. Eng. 20-064-49-83. Extended date. CD 5/24—ENR 5/26.

June 23

†Arkansas—U. S. Eng., 300 Broadway, Little Rock, levee and drainage structures, Lot IV, west of Morrilton, Conway County Levee Distr. 3 and 7, Conway, Inv. Serial No. Eng-93-056-49-74. Extended date. CD 6/8—ENR 6/16.

Ia., Clarion—Drainage Dist. 215, Wright Co., Clarion, 21,600 lin. ft. 6- to 30-in. drain tile in place, Plans deposit $10. Rowat & Murray, Belmond, engrs.

June 24

†Washington—U. S. Eng., Pittock Block, Portland, 5, Ore., levee imprv. in Wahkiakum Diking Imprvt. Dist. 4, along levee on south side of district 1 mi. southeast of Skamokawa, Serial No. Eng-35-026-48-561.

June 28

†Nebraska and Wyoming—Bureau Reclamation, Dpt. Interior, Casper, Wyo., earthwork, lateral lining and construction structures on Lateral 29.4 near Lingle, Wyo. and Lateral 94.4 near Lyman, Neb., Fort Laramie Canal, rehabilitation of laterals, North Platte Proj., Spec. 2705. L. N. McClellan, Bldg. I-A, Denver Federal Center, Denver, Colo., ch. engr.

†Oregon—U. S. Eng., Pittock Block, Portland, Zone 5, bank protection works along right bank of Willamette River at Upper Half Moon bend in Linn Co., 8 mi. northeast of Corvallis, Benton Co., Eng-35-026-49-558.

†Texas—U. S. Eng., 606 Santa Fe Bldg., Houston, dredging, approx. 2,450,000 cu. yd. materials, tributary channel Paso Real to 3 mi. below Paso Hondon of Gulf Intracoastal waterway via Arroyo Colorado, Willacy and Cameron Counties, Inv. N. Eng-41-243-49-339. $200,000.

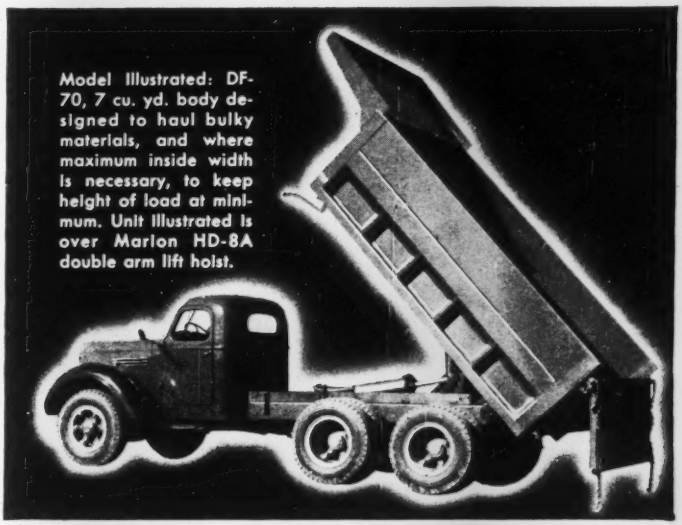
†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, dredging Trinity River from 3 mi. north Double Bayou to Anahuac, Inv. No. Eng-41-243-49-341. $100,000. CD 6/9/44—ENR 6/29/44.

June 29

†Oregon—U. S. Eng., Pittock Block, Portland, Zone 5, levee rehabilitation, incl. drainage facilities, structures on lower Smith River area east of Gardiner, Douglas Co.

†Vermont—U. S. Eng., Bldg. 21, U. S. Naval Drydock, South Boston, Mass., exploratory tunnels at Ball Mountain Dam Site, West River, Serial No. Eng-19-016-49-107. CD 6/7—ENR 6/9.

Proposal Advertisements see pp. 70 to 73


Model Illustrated: DF-70, 7 cu. yd. body designed to haul bulky materials, and where maximum inside width is necessary, to keep height of load at minimum. Unit Illustrated is over Marion HD-8A double arm lift hoist.

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DIAMOND AND SHOT CORE BORINGS—DRY SAMPLE BORINGS
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Scranton, Pa. Dept. E, U. S. A.

OFFICIAL PROPOSALS

Bids: June 30, 1949 (195)

Painting Bridge

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

PAINTING—EDISON BRIDGE OVER RARITAN RIVER—RT. 35

The project consists of the cleaning, touching up and painting with two coats of paint of all the metal work on the Edison Bridge, complete with all appurtenances, including structural steel, railings, castings, manhole covers, curb angles, light posts, traffic signal poles and supports, curb posts, etc., between the northerly abutment, just north of Smith Street, in the Township of Woodbridge, and the south abutment in the Borough of Sayreville, Middlesex County. The approximate tonnage of steel involved in this work is 2,450 tons.

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, June 30, 1949, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Detailed drawings of the structure to be painted and other pertinent information are on file in the office of the Maintenance Division of the State Highway Department, Room 221, State House Annex, Trenton, N. J., and may be inspected by prospective bidders during office hours. The form of bid, contract and bond will be furnished upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made on the standard proposal forms in the manner designated in the State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: June 30, 1949 (196)

Painting Viaduct

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

PAINTING—NORTH BERGEN VIADUCT—RT. 1

The project consists of the cleaning, touching up and painting with two coats of paint of all the metal work on the North Bergen Viaduct on Route No. 1, the Approach to the Lincoln Tunnel. The work includes both the roadway and the sidewalk approach railings between the north abutment of the viaduct in Bergenline Avenue and the Weehawken Township line in New State Highway Route No. 1, near its junction with the Paterson Plank Road. The work shall include all structural steel, railings, castings, manhole covers, curb angles, light posts, guard posts, etc. within the limits of the above named roadway and ramps; all in the Township of North Bergen, Hudson County. The approximate tonnage of steel involved in this work is 5,400 tons.

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, June 30, 1949, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Detailed drawings of the structure to be painted and other pertinent information are on file in the office of the Maintenance Division of the State Highway Department, Room 221, State House Annex, Trenton, N. J., and may be inspected by prospective bidders during office hours. The form of bid, contract and bond will be furnished upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made on the standard proposal forms in the manner designated in the State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: June 30, 1949 (197)

Construction of Overpass

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 26 EXTENSION, GREENWOOD AVE. CONNECTION

Construction of an Overpass at the Greenwood Avenue Connection on Route 26 Extension, in the City of Trenton, Mercer County. Federal Project No. (1)100(3). The principal items of construction are:

Estimated:
2,343 cu. yds. Concrete
225,400 lbs. Structural Steel
140,170 lbs. Reinforcement Steel

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, June 30, 1949, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a Federal Aid Project authorized by the provisions of Title 23 of the Revised Statutes of the United States and Section 2 of the Act of Congress approved June 16, 1936, 49 Stat. 1519, and is to be performed in accordance with the provisions and requirements of the Federal Works Agency, Public Roads Administration, as outlined in the Federal-State Agreement executed by the State which provides, among other things, that no labor shall be employed on the project at wages less than those determined as prevailing by the Secretary of Labor. Attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all unskilled labor employed on this contract shall be 65¢ per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be 75¢ per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.25 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: August 2, 1949 (205)

Plant Tender

METROPOLITAN WATER SEWERAGE AND DRAINAGE BOARD
SYDNEY, AUSTRALIA

Tenders in envelopes endorsed with the Plant Tender Number and addressed to the Secretary, 341 Pitt Street, Sydney, New South Wales, Australia, will be received until 2 p. m. on August 2, 1949 for the undermentioned:

Plant Tender No. 330
Supply and Delivery of up to eight (8) Concrete Buckets of Rated Capacity at least 8 cubic yards. No Deposit. Security 1% of tender price from the successful tenderer only. Specification and tender forms may be obtained from the Board by air mail application.

G. C. HICKS
Secretary.

An advance copy of the specification may be seen at the Office of the Australian Government Trade Commissioner, Room 426, 630 Fifth Avenue, New York 20, N. Y.

OFFICIAL PROPOSAL

RATE: The rate for Official Proposal Advertising is $1.00 per line (or fraction) per insertion.

COPY RECEIVED: up to 3:00 P.M. Friday for issue out following Thursday subject to space open for last minute ads.

SEND COPY: to Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

Additional
OFFICIAL PROPOSAL
Advertisements
on pages 71, 72, and 73

U. S. Government
(Continued from page 70)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2693) will be received by Bureau of Reclamation, Cody, Wyoming, July 6, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of the Boysen-Thermopolis, 115-kilovolt, single-circuit, 3-phase, woodpole transmission line, approximately 20 miles long. The work is situated between Boysen and Thermopolis, Wyoming. Time allowed for completion will be 550 days. For particulars, address Bureau of Reclamation, Cody, Wyoming; or Building 1-A, Denver Federal Center, Denver, Colorado.
MICHAEL W. STRAUS, Commissioner.
(189)

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, Foot of Prytania Street, New Orleans, La.—Sealed bids will be received in this office until 11:00 a.m., CST, August 2, 1949, and then opened for constructing a 500-bed Veterans Administration Hospital in the city of New Orleans, in the New Orleans District. Further information on application.
(188)

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota.—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Reconstruction of Apron and Gates, Pine River Dam, Headwaters, Mississippi River, will be received in this office until 11:00 A.M., C.S.T., June 21, 1949, and then publicly opened Further information upon application.
(178)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2703) will be received by Bureau of Reclamation, Fort Peck, Montana, July 12, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of the Williston substation. The work is situated approximately 4½ miles west of Williston, North Dakota. Principal items are approximately: 1,000 cu. yds. grading; 1,800 cu. yds. excavation; furnishing and erecting 215,000 lbs. steel structures; furnishing and handling 820 bbls. cement; installing electrical equipment; constructing substation complete; and other work. Time allowed for completion will be 350 days. For particulars, address Bureau of Reclamation, Post Office Box 1245, Fort Peck, Montana; or Building 1-A, Denver Federal Center, Denver, Colorado.
MICHAEL W. STRAUS, Commissioner.
(203)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2702) will be received by Bureau of Reclamation, Phoenix, Arizona, July 8, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of a system dispatchers building. The work is situated approximately 3 miles west of Phoenix, Arizona. Principal items are approximately: 1,900 cu. yds. excavation; furnishing and installing 1,500 lin. ft. of embedded electrical metal conduit; constructing the system dispatchers building complete; and other work. Time allowed for completion will be 400 days. For particulars, address Bureau of Reclamation, Phoenix, Arizona; or Building 1-A, Denver Federal Center, Denver, Colorado.
MICHAEL W. STRAUS, Commissioner.
(202)

Office of the District Engineers, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota.—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Repairs to Ogee Section of Dam, Stage No. 2, Lock and Dam No. 1, Minneapolis, Minnesota, will be received in this office until 11:00 A.M., C.S.T., June 22, 1949, and then publicly opened. Further information upon application.
(201)

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota.—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Baldhill Dam, Stage No. 3, Embankment and Closure Section, Sheyenne River, North Dakota, will be received in this office until 11:00 A.M., C.S.T., June 24, 1949, and then publicly opened. Further information upon application.
(200)

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota.—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Construction of Stage No. 3 of Diversion Channel and Upper Iowa River Channel Improvement and Levees, Decorah, Iowa, will be received in this office until 11:00 A.M., C.S.T., June 27, 1949, and then publicly opened. Further information upon application.
(199)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2690) will be received by Bureau of Reclamation, Tracy, California, July 15, 1949, and then publicly opened for furnishing labor and materials and performing all work for the completion of Tracy Pumping Plant, Central Valley Project, California. The work is situated about 9 miles northwest of Tracy, California. Principal items are approximately: installing pumps, 1,570,000 lbs.; installing single conductor, 73,000 ft.; bonded concrete floor finish, 4,700 sq. yds.; furnishing and installing ¼- to 4-inch diameter conduit, 17,400 ft.; installing power and control cable, 42,600 ft.; and other work. Time allowed for completion will be 285 to 650 days. For particulars, address Bureau of Reclamation, Tracy, California; or Building 1-A, Denver Federal Center, Denver, Colorado.
MICHAEL W. STRAUS, Commissioner.
(204)

OFFICIAL PROPOSALS

Bids: July 7, 1949 (198)

Construction of Bridge

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

SEA BRIGHT BRIDGE

Construction of the Sea Bright Bridge over the South Branch of Shrewsbury River in the Boroughs of Sea Bright and Rumson, Monmouth County, Federal Aid Secondary Project No. S-1114(1). The work consists of a double leaf bascule span and nine fixed spans. The principal items of construction are:

Estimated:
1,640,000 lbs. Structural Steel
410,000 lbs. Reinforcement Steel
2,250 cu. yds. Concrete
20,000 lin. ft. Treated Timber Piles
72,000 lbs. Machinery
1 S. Bascule span Roadways & Sidewalk Flooring
1 S. Counterweights
1 S. Electrical Equipment

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, July 7, 1949, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 A.M. DAYLIGHT SAVING TIME) and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 23 of the Revised Statutes of New Jersey and Supplements and by Sections 2, 3 and 4, P. L. 521, 78th Congress, and is to be performed in accordance with the special provisions and requirements of the Federal Works Agency, Public Roads Administration, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 48 East Front Street, Red Bank, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all unskilled labor employed on this contract shall be 65¢ per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be 75¢ per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.25 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: August 8, 1949 (194)

Construction of Refuse Incinerator

CORPORATION NOTICE
CITY OF YONKERS

PROPOSALS FOR THE CONSTRUCTION OF REFUSE INCINERATOR FOR THE CITY OF YONKERS, NEW YORK, AS PER PLANS AND SPECIFICATIONS.

Office of the
Board of Contract and Supply

Yonkers, New York June 8th, 1949.

Pursuant to Special Ordinance No. 209, 1948 and Special Ordinance No. 98, 1949, sealed Proposals will be received at the Office of the Secretary of the Board of Contract and Supply, City Hall, Yonkers, New York, after 2:00 o'clock P. M., (EASTERN DAYLIGHT SAVING TIME) on August 8th, 1949 and until 2:00 o'clock P. M., (EASTERN DAYLIGHT SAVING TIME) on August 10th, 1949.

Copies of Information for Bidders, Form of Proposal, Form of Contract, Drawings, and Specifications for the aforesaid work may be obtained at the Office of the Board of Contract and Supply and at the Office of Metcalf & Eddy, Engineers, 700 Statler Building, Boston, Mass., and only bids made upon said forms will be accepted. Copies may be obtained upon deposit of $50.00 (CASH OR CERTIFIED CHECK) which will be refunded to each bidder who bids, or returns the Specifications unused, within Thirty (30) days after the opening of bids.

When such improvement shall have been completed, the whole expense thereof shall be borne by the City at large, payable from the proceeds of a sale of bonds of the City hereafter to be authorized.

Dated June 8th, 1949.
FRANK VAN BLARCOM
Secretary of the Board of Contract and Supply

(Continued on page 77)

CONTRACTORS
WATCH
THIS SECTION
for New Projects

Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

(Continued from page 71)

Bids: June 22, 1949 (177)

State Road Work

NOTICE TO CONTRACTORS. STATE DEPARTMENT OF PUBLIC WORKS. ALBANY, N. Y.—Pursuant to the provisions of Chapter 83 Laws of 1936, as amended, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on June 22, 1949 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract containing 1 to 15 sheets is $5.00; 16 to 30 sheets, $10.00; over 30 sheets, $20.00. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good conditions, similar period, will be 50% of deposit.

County	Contract No.	Name - Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 3			
		WM. ROBINSON, Dist. Engr., 301 E. Water Street, Syracuse, N. Y.			
Cayuga	FC 49-2	Dry Creek Bridge on Groton-Locke-Moravia 0.29	I-Beam 45.9' Asph. Conc. Opt.	$6,000 Plans $5.00	$100,000.00
		DISTRICT No. 4			
		A. R. MULLIGAN, Dist. Engr., Barge Canal Terminal, Rochester, N. Y.			
Livingston	SH 49-11 RC 49-68	Geneseo By-Pass 2.44 Geneseo-Piffard, S. H. 718	Alpha $150.50 I-Beams 2 at 60' Thru Truss 160' Conc. 8" Thk., 20'-22' Wdt.	$50,000 Plans $10.00	$854,000.00
Monroe	E170	Barge Canal Bridge, Long 0.44 Pond Rd.	Alpha $54.39 Suspended Span 100' Cantilever Span 2 at 37' Anchor Span 2 at 75' Asph. Conc. Type 3A	$22,000 Plans $5.00	$404,27135.
		DISTRICT No. 5			
		C. R. WATERS, Dist. Engr., 65 Court Street, Buffalo, N. Y.			
Cattaraugus	RC 49-66	Arcade-Farmersville, Pt. 2, 2.44 S. H. 8115	Asph. Conc. Opt.	$7,500 Plans $5.00	$130,000.00
Erie	OT 49-4	Ontario Thruway (Walden Ave. to Beach Rd.) and Access Roads 2.32	Grading — 0.07 mi. Asph. Conc. Opt.—0.40 mi. Fdt. Crse. Rob Gr. or Slag or Roc Stone—1.85 mi.	$55,000 Plans $10.00	$957,000.00
		DISTRICT No. 7			
		R. F. HALL, Dist. Engr., 444 VanDuzee Street, Watertown, N. Y.			
Clinton	FASS 49-18	Old Military Tpk. Proj. S 71 S1673	Alpha $63.00 I-Beams 84", 32" 6" Treated Gravel: Triple Surf.	$33,000 Plans $20.00	$600,000.00
		DISTRICT No. 8			
		J. S. BIXBY, Dist. Engr., Pleasant Valley Rd., Poughkeepsie, N. Y.			
Rockland	PSC 6622	Elim. of N.Y.C.R.R. West Shore Grade Xing with New Main Street (Haverstraw) Elim. of Westside Ave. Crossing 0.28	I-Beams, 46' 8", 49' 6" Asph. Conc. Opt.	$45,000 Plans $20.00	$833,000.00
Westchester	RC 49-67	District No. 8—Westchester County Tree Trimming	Tree Trimming	$500 Plans $5.00	$10,000.00
		DISTRICT No. 9			
		F. W. DONOVAN, Dist. Engr., 71 Frederick Street, Binghamton, N. Y.			
Chenango	RC 49-64	Nineveh-Afton, S. H. 5200 4.64	Asph. Conc. Opt.	$11,000 Plans $5.00	$211,000.00
		DISTRICT No. 10			
		J. J. DARCY, Dist. Engr., Montauk Hwy. at Little E. Neck Rd., Babylon, L. I., N. Y.			
Bronx	FABRP49-2	Bronx River Pkwy. So. Ext. 180th Street Proj. U979-57 0.40	Total 1497' Steel Viaduct Grd & Struct.	$140,000 Plans $20.00	$2,465,000.00
Bronx	FABRP49-3	Bronx River Pkwy. So. Ext. Gr. Sep. at N.Y., N.H. & Hartford R. R. & Tremont Ave. Proj. No. U979-4); U979-4 0.17	Steel Girder 2 Spans 82' 10", 55' 2½" Steel Girder 100' 9" Grd. & Struct.	$60,000 Plans $20.00	$1,019,000.00
Suffolk	RC 49-65	Quogue-Southampton, S. H. 1274 3.70	Asph. Conc. Opt.	$10,000 Plans $5.00	$180,000.00

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by cash, draft or certified check payable to the order of "State of New York, Commissioner of Taxation & Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS enable you to get the greatest variety of bids—and so to get the lowest prices consistent with the best work.

OFFICIAL PROPOSALS

Bids: July 1, 1949 (190)

Reinforced Concrete Culvert

Notice to Contractors

Extension Poor House Run Flood Control Project
York, Pennsylvania

Sealed bids for the construction of a reinforced concrete culvert ten feet (10') high and eight and one-half feet (8½') wide inside by ten hundred seventy feet (1070') long will be received by City Council in City Hall, City of York, York County, Pa. until 2:30 A.M., D.S.T., July 1, 1949, and then publicly opened and read aloud at a regular meeting of Council.

The Information for Bidders, Form of Contract, Plans and Specifications may be examined at the office of the City Engineer, York, Pa. Copies thereof may be obtained at the said office upon payment of twenty dollars ($20.00) for each set. Any bidder upon returning such set in good condition, will be refunded his payment and any non-bidder upon returning such set promptly will be refunded fifteen dollars ($15.00).

The City Council of the City of York, Pa. reserves the right to waive any informalities in, or to reject any or all bids.

A certified check made payable to the order of City Treasurer, York, Pa. in the amount of one hundred dollars ($100.00) must be deposited by each bidder with his bid as a guarantee that in case the contract is awarded to him, that he will, within five (5) days thereafter, execute such contract and furnish a performance bond in the amount of the contract and satisfactory to the City Council.

An additional bond of fifty per cent (50%) of the accepted bid is required as security for the payment of all persons performing labor and furnishing materials in connection therewith, in accordance with "Third Class City Law".

No bidder may withdraw his bid within thirty (30) days after the date set for the opening thereof. Any bid may be withdrawn prior to the above scheduled time for opening of Bids or authorized postponement thereof.

FRED A. SCHIDING
Director of Streets & Public Improvement
York, Pennsylvania
Dated: June 3, 1949
William E. Weigle
City Engineer

Bids: August 2, 1949 (192)

Sand Treatment Plant

METROPOLITAN WATER SEWERAGE & DRAINAGE BOARD
SYDNEY, AUSTRALIA

Tenders in envelopes endorsed with the Plant Tender Number and addressed to The Secretary, 341 Pitt Street, Sydney, New South Wales, will be received until 2 p.m. on August 2, 1949 for the undermentioned:

Plant Tender No. 337
Supply, Delivery and Erection of Sand Treatment Plant. No Deposit. Security 1% of tender price from the successful tenderer only. Specifications and tender forms may be obtained from the Board by air mail application.

G. C. HICKS
Secretary.

An advance copy of the Specification may be seen at the office of the Australian Govt. Trade Commissioner, Room 426, 630 Fifth Avenue, New York 20, N. Y.

U. S. Government

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota. —Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Construction of Stage No. 1 of Dam, Lower Lock and Dam, St. Anthony Falls, Minneapolis, Minnesota, will be received in this office until 11:00 A.M., C.S.T., June 23, 1949, and then publicly opened. Further information upon application. (179)

(Continued on page 73)

OFFICIAL PROPOSALS

(Continued from page 72)

Bids: July 1, 1949 (191)

Construction of Screen House, etc.

CITY OF NEW BEDFORD, MASSACHUSETTS. Sealed bids for construction of a new screen house, altering the existing pumping station, installation of new pumping equipment and connections to the existing water mains at the Quittacas Pumping Station, of the City of New Bedford, will be received by the New Bedford Water Board at the office of the Water Board, Room 312, Municipal Building, New Bedford, Massachusetts, until 2:30 p.m., Eastern Daylight Saving Time, on July 1, 1949, and then at said place opened publicly and read aloud. The Contract Documents, including Specifications and Drawings, may be examined at the office of the Water Board, New Bedford, Massachusetts, and at the office of Fay, Spofford & Thorndike, Engineers, 11 Beacon Street, Boston, Massachusetts, on and after June 6, 1949, every week day except Saturday between the hours of 9:00 a.m. and 4:00 p.m. and copies thereof may be obtained at the office of the Engineer upon payment of $15.00 for each set, for which no refund will be made.

Each bid must be accompanied by a certified check for 5 per cent of the bid price, as bid security. No bid may be withdrawn within thirty days after the date of opening thereof.

A performance bond in an amount equal to 100 per cent of the contract price will be required. The right is reserved to waive any informalities in or to reject any or all bids, and to award the contract to any one of the contractors bidding on the work regardless of the amount of the bid.

CITY OF NEW BEDFORD,
MASSACHUSETTS
NEW BEDFORD WATER BOARD
By
H. C. MANDELL, CLERK

June 3, 1949

OFFICIAL PROPOSAL

RATE: $1.00 per line (or fraction) per insertion.

CLOSING DATE: 3:00 p.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

Bids: July 11, 1949 (187)

Water Softening Plant

6 MGD NEW WATER SOFTENING PLANT
HURON, SOUTH DAKOTA

Sealed proposals for furnishing all labor, materials, equipment and constructing a New Water Softening Plant will be received by the Board of Commissioners, Huron, South Dakota, until 2:00 PM (CST) on the 11th day of July 1949 and then publicly opened and read.

The work covers the furnishing of labor and materials and equipment installed and constructing the complete New 6 MGD Water Softening Plant, requiring approximately:

PART I

Excavation	9,500 Cu Yds
Concrete Substructure	2,500 Cu Yds
Superstructure, Brick or Steel or Concrete Blks., 1 and 2 Stories	114 ft x 182 ft
Plant Piping & Valves	30 Tons

PART II

HS Motor Pumps	2

Lime Equipment—Bins, Elevator, Chutes, Slaker, Feeders, Filter Equipment for 3—1½ MGD Units.
Razing & Altering Old Filter Bldg.
LS Pump Station, altered & 3 New Motor-Pumps, Piping & Valves
River Intake, Structure & Pipe Line
Yard Work, HS Main & Ventr. Meter, Wash Sewer & Sanit. Sewer.

Each proposal shall be accompanied by a Cashier Check or Certified Check on a South Dakota Bank as a guarantee of entering into the Specified Contract and furnishing a 100% Performance Bond. All proposals must be made on the forms to be furnished by the Owners.

Plans, Specifications, Bond and Contract Forms may be seen at the Auditor's Office, Huron or at the Consulting Engineer Office, E. H. Dunmire, 2774 South St., Lincoln, Nebraska or copies of Plans, Specifications, Bidding Forms etc. may be obtained from the Consulting Engineer by the deposit of $50.00, of which, $10.00 will be returned for each set of documents returned at the time of the Letting.

Payment for the work will be made monthly, in cash, on the Engineer's Estimates.

City reserves the right to reject any or all bids, or Item Bids in Part II.

J. S. Tschetter, Mayor
W. H. Olson, Auditor
E. H. Dunmire, Consit. Engr.
Lincoln, Nebraska

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED—ENGINEERS, Architects, Draftsmen experienced in the design of sewers, sewage treatment plants, water treatment plants and industrial buildings. Also engineers to supervise construction. State qualifications, experience, salary requirements and date available. P-9155, Engineering News-Record.

CIVIL ENGINEERING: College teaching; New England. One position involves Strength of Materials, and Mechanics; some opportunity for developments in testing lab.; Master's desirable. Second position involves teaching in Sanitary Engineering along with Mechanics and Surveying; at least Master's degree. Instructor or assistant professor. P-9015, Engineering News-Record.

WANTED: THOROUGHLY experienced estimator for building contractor specializing in public works. Stanley W. Newman Co., Inc., Mobile, Ala.

HIGHWAY ENGINEER, graduate civil, 30 to 45 with at least 5 years experience in highway design or construction. Concrete pavement experience essential and soils experience desirable. Must be able to write good technical reports. Permanent position with ample opportunity for advancement. Salary $350 to $450 depending on age and experience. Location Chicago with some traveling. P-9090, Engineering News-Record.

STRUCTURAL DESIGNERS and draftsmen experienced in bridge work. Middle Atlantic location. Permanent positions for qualified men. P-9053, Engineering News-Record.

POSITIONS VACANT

DRAFTSMAN: WESTERN New York Structural Steel Fabricator will accept applications from men thoroughly experienced in detailing and checking for assistant to chief draftsman. Please give complete resume of experience and expected salary. Replies will be held in strict confidence. P-9102, Engineering News-Record.

WANTED: THOROUGHLY experienced Structural Engineers, Architectural Engineers, High Pressure Piping Engineers and Draftsmen qualified for work on drafting board for design of steam-electric power plants, water and sewage treatment plants. Also experienced field engineer qualified to lay-out, check and supervise construction of above. Location southeastern states. State qualifications, references, salary required and earliest date available. P-9123, Engineering News-Record.

RIGGER FOREMAN, experienced in rigging for driving extra long steel H-Piling, for building foundation. State age, experience in full, and all pertinent information. Job located in northern New York state. P-9120, Engineering News-Record.

WANTED: INSTRUCTOR or Assistant in Structural Engineering. Professional experience desirable but not required. Salary range $2500 to $4200 for eleven months. Write or call Prof. E. C. Harris, Penn College, Cleveland 15, Ohio.

WANTED: ENGINEER-Estimator experienced in excavations, foundations and underpinning work. For work in New York City only. Give complete experience record and references. P-9182, Engineering News-Record.

CHIEF ESTIMATOR—Construction. Growing firm. Long experience on alterations and public works required. Write attention Mr. Stewart. P-9167, Engineering News-Record.

SALES ENGINEER: 25-40, to make inspections, estimates, close and follow jobs in field. Highly specialized work—thorough training furnished by us. Traveling essential. Headquarters New York area. P-9175, Engineering News-Record.

Additional Positions Vacant Ads on page 74

POSITIONS VACANT

WANTED: ESTIMATOR for Heating, Plumbing, Air-Conditioning Contractor located in Central Pennsylvania. State age, qualifications, experience and salary expected in first letter. P-9176, Engineering News-Record.

GRADING FOREMAN: Must be able to interpret road plans and stakes, set finish stakes, take charge of job. First letter state age, experience, references, salary required. P. O. Box 182, Grand Forks, North Dakota.

ENGINEER, CIVIL, experienced in drafting, quantity estimating, field layout work and supervision for general contractor. Write P. O. Box 755, Langley Field, Va.

FOR CENTRAL & Northern New York State: Bricklayer Foreman capable of handling brick and stone work on large project, ready to start in four to six weeks. Answer in own handwriting stating age, background, character and experience, references, and following, if any. P-9188, Engineering News-Record.

POSITIONS WANTED

GENERAL SUPERINTENDENT, 50, of the highest grade available for concern doing major heavy work, bridges, foundations and marine structures. Excellent references. Address PW-3038, Engineering News-Record.

TOP FLIGHT Construction Executive has C.E. and L.L.B. degrees. Many years with pre-war background as Construction Superintendent industrial plant and commercial buildings of large magnitude. Low cost producer and fast completions. Well recommended. Address PW-3039, Engineering News-Record.

(Continued on page 74)

OVERSEAS POSITIONS

A large American company in South America requires the following personnel.

EQUIPMENT INSPECTORS

Engineers with three to five years refinery experience familiar with pressure vessels, heat exchanges, pumps, piping, corrosion, and erosion. Must have knowledge of API-ASME code as well as physical and chemical properties of metals.

ESTIMATORS

Engineers with five years experience qualified to make field investigations and prepare preliminary design from written descriptions or test sketches relative to cost estimates. Must be experienced in preparing physical capital budgets, appropriations requests, cost analyses, unit costs, cost trends, and making studies pertaining to long range policies for repair, replacement and maintenance programs preferably in refinery operations.

Write, giving age, education, marital status, and detailed description of experience.

Box 308-E
Radio City Station
New York 19, New York

WANTED
ESTABLISHED DISTRIBUTORS

In Building Construction Field to Handle Nationally-Known Concrete Form Coating.

Several Preferred Territories Now Open.

RW-9186, Engineering News-Record
68 Post Street, San Francisco 4, Calif.

GRADUATE CIVIL ENGINEER

with broad experience, a substantial portion of which has been in hydraulics. An excellent opportunity with a large public utility located in eastern Pennsylvania. Apply by letter stating education, experience and salary requirements. Address

P-8786, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

Wanted
Structural Detailers & Checkers

Large, modern structural steel fabricating plant has need of services of 4 detailers and 2 checkers for drafting room. Splendid working conditions. Must be top men and experienced. Applications treated with confidence.

K. O'NEAL - O'Neal Steel Works
Box 2623 Birmingham 2, Alabama

Chemist Position Vacant

Position as Chemist vacant in Water Department in large southern city. Modern rapid sand filter plant, reservoir water—soft. Write care of this magazine, giving full particulars as to training and experience, salary expected, as well as personal information.

P-9139, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

MAN WANTED
SALES ENGINEER

For selling and promoting asphalt construction and materials. Permanent position and excellent opportunity for right man. State qualifications and references.

SW-8369, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

EMPLOYMENT

AND OTHER BUSINESS OPPORTUNITIES

UNDISPLAYED RATE

(Not available for equipment advertising)

$1.20 a Line, minimum 4 lines. To figure advance payment count 5 average words as a line.

INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

Box Numbers in care of our New York, Chicago and San Francisco offices count as one additional line.

Replies are forwarded each day as received at each of the offices mentioned without additional charge.

Discount of 10% is allowed if full payment is made in advance for 4 consecutive insertions.

DISPLAYED RATE

The advertising rate is $11.50 per inch for all advertising appearing on other than a contract basis. Contract rate quoted on request.

An advertising inch is measured ⅞ inch vertically on one col., 3 col.—10 inches to a page. E.N.R.

ADMINISTRATIVE OR SALES EXECUTIVE

Seasoned executive, with 10 years experience in the manufacture and marketing of construction equipment, desires opportunity to apply this experience effectively. Has successful record in both sales and general administrative capacities. Experience includes rebuilding disorganized company manufacturing construction equipment, and developing it into one of the most successful in its field. Complete details of business record upon request.

P-9189—Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED
(Continued from page 73)

PROJECT MANAGER or General Superintendent desires connection with construction company doing foreign or domestic work. Broad experience heavy construction, organization, and over-all management. Large well trained following. Highest references. Available June 1st. PW-9054, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT — 27 years experience in complete charge of projects consisting of: chemical paints; slip-form concrete structures; material handling and process equipment installations; grain elevators and dryers; cement plants. Under fifty years of age. Will go any location. Further details on interview. PW-8914, Engineering News-Record.

CONSTRUCTION OFFICE man, accountant, 40, wants job with reliable company. Fully experienced in full charge of all paper work. 4 years in So. Fla. Prefer Florida or Gulf States. J. J. Quirk, 433-101 Street, Brooklyn, N. Y.

STRUCTURAL ENGINEER, registered wants to take work in contract. Thoroughly experienced in design of bridges and other heavy construction. Large or small contracts efficiently handled. PW-9082, Engineering News-Record.

BUILDING CONSTRUCTION: Thirty years experience covering office management, general supervision, estimating; apartments, hospitals, office buildings, hotels, laboratories, industrial plants. PW-9128, Engineering News-Record.

EXPER. ESTIMATOR & Manager. 12 years contracting experience, field and administrative, on heavy construction, locks and dams, river and harbor works, dredging. Responsible charge from estimating and bidding unto completion of projects. Assoc. Member ASCE; MIT graduate. Age 35. PW-9101, Engineering News-Record.

CONTRACTOR'S MANAGER, 20 years experience managing, estimating, supervising for General Contractors, both on Building and Heavy Construction. Location immaterial. Some preference for Southern or Western. Available soon. Salary and bonus basis. PW-9114, Engineering News-Record.

CONTRACTOR'S RIGHT Hand Man: age 36. Experienced Manager-Estimator-Purchasing Agent—On: Commercial, Multi Residential, Industrial Bldg. Construction—including All Utilities;—and Engineered Construction covering Airports, Marine Facilities, Railroads, Roads and Quarry Operation. Desires permanent position as Manager, Estimator, or Purchasing Agent for Gen. Contractor; or as Area Sales Manager for Cement Co., Bldg. Supply Co., or w/Equipment Mfg. or Dealer. Good References. PW-8941, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill. In reply state exact salary connected with position open.

POSITIONS WANTED

CONSTRUCTION EXECUTIVE: Thirty years of experience, twelve of which was self-employed in New York. References relating to capability, integrity and resourcefulness obtainable. Wishes a position with construction firm in or around the city of New York, preferably in the city. PW-9166, Engineering News-Record.

CIVIL ENGINEER, 25, recent M. S. graduate Columbia Univ., one year structural steel drafting experience. Desires work in N. Y. C. area in construction or design and field work in steel or concrete. PW-9140, Engineering News-Record.

ESTIMATOR. 25 years experience, office and field. Available for general contractor, capable of preparing complete plans, specifications and estimate for any project contractor desires to bid. License Architect. Salary plus bonus and expenses. Available June 10, 1949. PW-9141, Engineering News-Record.

STRUCTURAL ENGINEER, Steel & Concrete design, formerly with Truscon Steel Co. and Albert Kahn Inc., Architect, Detroit, Mich. 30 years experience. Available at once for position requiring top fast designer part time. Salary $150.00 week and expenses. Nothing to large. License #113 W. Va. Reference Mr. O. W. Irwin, Manager, Carnegie Ill. Steel Co., Pittsburgh, Pa. PW-9142, Engineering News-Record.

ACCOUNTANT, EXECUTIVE or Field, preferably engineering. Wide experience timekeeping materials. Purchasing, field costs. Office and systems accounting. Will work anywhere, anytime as permanent employed. PW-9151, Engineering News-Record.

ESTIMATOR OR Specification Writer. Graduate. 30 years wide experience building and general construction, including estimating, purchasing, specification writing. Location desired —West of Rockies. Salary $125 per week. PW-9152, Engineering News-Record.

CONCRETE BRIDGE Superintendent—age 48. 30 years experience foundations, pile driving, excavations, with ability to supervise all crafts available at once. PW-9196, Engineering News-Record.

FIELD OFFICE Man—complete knowledge. Bookkeeping, payroll, cost detail, purchasing, and office management. Five years construction office experience. PW-9192, Engineering News-Record.

(Continued on page 75)

GENERAL CONTRACTORS
LOOKING FOR A BUILDING SPECIALIST

Registered Professional Engineer with twenty years experience, capable of supervising or performing all phases of general building construction from estimating to final completion in both field and office.

PW-9185, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

CONSTRUCTION ENGINEER

Broad experience in charge of building construction operations in the States and in foreign countries. Lately in charge of large industrial project in the States. Knowledge of Spanish. Mature judgment.

PW-9155, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SALES MANAGER
AVAILABLE

Construction, mining, and industrial equipment. Twenty-one years complete experience engineering, contracting, distributing, and manufacturing. Civil engineer, age 42, excellent health. Domestic or foreign. Location and contract open.

PW-9105, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SEARCHLIGHT SECTION

SELLING OPPORTUNITY WANTED
(Continued from page 74)

GOING TO Israel. Civil engineer can handle your contacts in engineering, architectural, and sales fields. RA-9191, Engineering News-Record.

FOR SALE

Cable 1¼"

2 Reels 1000' New Blude center Roefling, 22¢ per ft. Write C. E. Prouty, R. D. 1, Collegeville, Pa.

WANTED
GENERAL MANAGER

with experience and money to invest. Well established contractors equipment firm in New Jersey. Represents leading manufacturers with exclusive contracts. Furnish bank references and experience data.

BO-9139, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

BUSINESS OPPORTUNITY

We will financially qualify Midwestern asphalt company which is equipped and wishes to expand business by co-partnership arrangement, in future contracts. We are capable of prompt decisions with good banking references.
Correspondence confidential.

BO-9153, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ESTIMATORS UNIT COSTS HANDBOOK

● **GREATEST TIME SAVER YET!**

This valuable document, tabbed for easy reference, is a ready method of estimating costs—a quick check against your own figures that might prevent costly mistakes. Over 2000 materials and labor unit costs listed in handy index form, starting with Site Preparation and continuing through every category of construction. General expense items also included. Compiled by professional estimators and based on construction projects of over $100,000 from coast to coast. Make sure your estimates are right. *Send for your copy NOW.* Price, $3 postpaid. Order today.

ESTIMATORS SERVICE
P. O. Box 282 ● Knoxville, Tenn.

SURVEYING INSTRUMENTS

USED ● REBUILT ● SALE
RENT ● REPAIRING

It costs no more
to have your instruments of any make
repaired by the makers of the
WORLD'S FINEST SURVEYING INSTRUMENTS
since 1871
C. L. BERGER & SONS, INC.
37 Williams Street, Boston 19, Mass.

WANTED
Factory New, D-7 and D-8
CATERPILLAR TRACTORS
MODEL 6 and 80-D
NORTH WEST SHOVELS
CHAS. P. ALLEN INC.
1270 Commercial Trust Bldg., Phila., Penna.
Tel. Rittenhouse 6-9513

WANTED
SHOVEL AND BACKHOE ATTACHMENTS

for Insley K12, P&H 255A and Link-Belt LS 85.

WENZEL MACHINERY COMPANY
2136 Jefferson Street, Kansas City Missouri

WANTED
80D Northwest Undercarriage

W-9161, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

FOR RENT
New and almost new Manitowoc Speedcranes

60 ton—2½ cu. yd. capacity Combination cranes, dragline and clamshells, caterpillar mounted—diesel powered. Reply

FR-8967, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

FOR SALE

1 Size "0" Vulcan Pile Hammer
1 72' lg. Swinging Leads
1 Driving Cap for 14" H Piling

GAHAGAN CONSTRUCTION CORPORATION
90 Broad St., New York 4, N. Y.

1—Bucyrus-Erie model 22B ⅝ cy. power shovels $14,000.00 each; 1—Model 304 Koehring crane with 40 foot boom $11,000.00. All three machines unused.

A. G. Sherwood Construction Co.
Independence, Kansas

PIPE

CORRUGATED METAL PIPE

6000 ft. 24"
2000 ft. 12"—Some new, some used (used for ventilating system at Nottingham Water Intake.

DRILLS—MUCKING MACHINES DINKIES

(operated by batteries and electric starters-comp.)
8000 ft. 24" gage—30 lb. rails
40 HP & 45 HP Electric blowers

Call or write

THE KALILL COMPANY
4161 W. 150th St. Cleveland, 11, Ohio
Phone: Days Clearwater 3848
Nights Clearwater 7922

6" STD. LINE PIPE

42,500' 6⅝" O.D., 18.97# Lapweld, 40 ft. random lengths, plain ends beveled, used, good condition. Priced low immediate delivery from East St. Louis, Ill.

HORWITZ PIPE & STEEL CO.
Ph. 2-9128 Tulsa, Okla

ALL SHOP—REBUILT

Lorain 82 Diesel 2 cy shovel, unused
Lorain 79 Diesel 1½ cy shovel & crane
Lorain 30 gas ½ cy shovel, backhoe & crane
Caterpillar D-7 hydraulic bulldozer, 3T series
International TD-18 hydr. & Cable bulldozers, 1948

SALE - RENT - TRADE-IN
BENDIX MACHINERY CO., INC.
401 Broadway, New York 13 Tel: Canal 6-5693

HANSON DEALER OFFERS

Hanson model 31 crane capacity to 5 tons, one year old used little. An excellent buy. Guarantee 30 days.
Price with 30' boom $625.00
All attachments available at cost.
GENERAL EQUIPMENT CO.
133-18 227 ST. LAURELTON, L. I., N. Y.

RENT—SELL—TRADE

EUCLID, 18 yard bottom dump, 200 H.P. Cummins diesel, excellent condition $7,500
International TD-18 with B-E angledozer $6,500
International TD-14 with angledozer and Carco winch $5,500

TEXAS TRACTOR AND EQUIPMENT CO.
1923 Kolfahl St. Houston 3, Texas

DIESEL ELECTRIC SET

Full Diesel 4 cyl. Radiator cooled. Low water and oil cut-out. Direct connected to 42½ K.W. 1200 R.P.M. 220 V. 3 Ph. Generator. With direct connected excitor. Automatic voltage regulation and overload protection on instrument panel. Recent model, used for stand-by. $1250.00. Milwaukee.

WALTER J. HOENECKE
2608 West Ruby Ave., Milwaukee, Wis.

FOR SALE

1—Parsons Ditcher, Mod. 310
1—Cleveland Trencher Mod. 110A Diesel
1—Osgood Crane 1¼ Yd. 60' Boom
15—Hobart Elec. Arc Welders, 200 Amps
For complete list of surplus equipment write
BYRNE-PEORIA COMMUNITIES, INC.
P. O. Box 1259 Peoria, Illinois

FOR SALE AT REDUCED PRICES!
FORMER GOVERNMENT SURPLUS & SALVAGE LUMBER
Well Seasoned, Sound Material
Will be re-manufactured to your specifications
HILLCREST LUMBER CO.
1036 Grand St., Bklyn., N. Y. EV ergreen 7-2121

FOR SALE
New Northwest 25 Shovel

BACKHOE, and crane. Price $16,800. FOB Portland. Used Northwest 25 shovel backhoe, and crane.
Subject to Prior Sale.
C. PROFENNO CO.
25 Free St., Portland, Me.

FOR SALE
NEW 100 H. P. Cat. 12 MOTOR GRADER
Large tires all around, list price.
FEYEN CONSTRUCTION CO.
277 Burgess St. St. Paul 3, Minn.

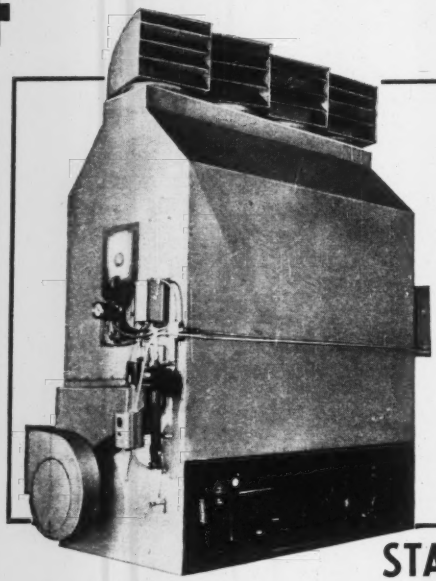
FOR SALE
NORTHWEST 80D UPPER DECK
from Barge Crane
Excellent condition $16,500.00
FS-9160, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

REBUILT TRUCK CRANES

BAY CITY 20 tons cap. on ten wheel truck
LORAIN MOTO 15 ton cap. on ten wheel truck
LORAIN 30, 10 tons cap. on ten wheel truck
INSLEY "K" 7 tons cap. on six wheel truck
LORAIN 30 CRAWLER threeway combination

BENDIX MACHINERY CO., INC.
401 Broadway, New York 13 Tel: Canal 6-5693

4 DRAVO COUNTERFLO HEATERS



MODEL 200—HO

Capacity 2 million btu/hr

Completely equipped with heater, controls, oil burner, blower fan motor, etc. for 3 60 220v operation. Burns No. 5 free flowing fuel oil. Approximate weight—6,000 lbs. (Used about 1 year only.) Four units available for delivery.

Priced to move quickly

Stacks also available. Extra. **$2,200.00** each

f. o. b. Chicago

STAR LUMBER CO. 201 West 87 St. Chicago 20, Illinois

CONSTRUCTION EQUIPMENT

Finishing Up Large Apartment Job

Osgood ¾ yd. Crane & Backhoe
Ransome 65 Concrete Mixer
1700 ft. Atlas Steel Basement Forms
600 ft. Curb & Gutter Forms
GMC '47 Two-ton Stake Truck
GMC '43 Two-ton 6x6 Truck
5 Flat Bed Trailers
GMC 1½ Ton Stake Truck
2 Gas Powered Mortar Mixers
3 Diaphragm Pumps, 3", on Wheels
K & E Transit, ±5085 CF with Tripod
K & E Level, ±5003F with Tripod
Warren Knight Transit with Tripod
Dietzgen Leveling Rods, ±6502 with Targets
Ranging Poles, Steel
Air Compressor

Also: Band Saw, Joiner, Planer, Table Saws, Power and Radial Saws, Electric Hand Saws, Drills, Borers, Sanders, Morticer, Arc Welder, Pipe Threading Machine, Small Tools, Large Quantity plumbing and radiant heating materials (Cast Iron, Copper Pipe and Fittings) and equipment.

Don A. Balfour
THE TYLER CORPORATION
Falls Church, Virginia FA 2763

FOR SALE

1—Euclid Loader Model BV5, Serial 5BV34 New May 1947—used on one job.

7—Terra Cobra Scrapers, 150-HP Cummins engines. These machines new 1946-1947. Less than one year work. Latest Improvements including cabs, 12-c.f. air compressors and 24-V generators, drive chains enclosed. All overhauled and appearance like new. Will sell in lot or separately.

All above subject to prior sale and F.O.B. St. Paul, Minn.

Terms can be arranged

Address
R. M. Knox—B. S. Crooks
424 Endicott Bldg. St. Paul, Minn.

1—Bucyrus-Erie Stripping Shovel, Model 54 B, Serial 53124. Buda-Lanova Engine. Used 2 months.

2—Hardsocg Horizontal Drills with Hydraulic Feed. One with 60 ft. Augur, the other with 100 ft. Augur. One new, the other in good condition.

2—Hardsocg Vertical Coal Drills, Type A7. Both with 3 and 6 ft. section Augurs. Excellent Condition.

1—Chicago Pneumatic Diamond Drill, Model CP 8, Serial 812. With 100 ft. drill rod and F-M Typhoon water pump. Like new.

PATTERSON CONSTRUCTION CO.
Tenth and Railroad St. Monongahela, Pa.
Telephone 920

The following used wood barges are offered for sale, berthed in Baltimore, Maryland, Harbor:

One (1)— 84 ft x 36 ft.
One (1)—111 ft. x 33 ft.
One (1)— 92 ft. x 33 ft.

Baltimore Telephone:
Broadway 2800, Extension 2
F. N. Sands

FOR SALE

1—UNIT 1947 Mod. 514—½ Yd. Machine Available with new back Ho or Shovel Attachment—$7200.

1—1 H.C. TD-14—Wide Tread Tractor with Hydraulic Bulldozer—$5000.

1—Davey '105' Comp. mounted on 4 Pneu. Tires—$750.

1—Davey 105' Air Comp. mounted on 2 Pneu. Tires—$1200.

NORTH JERSEY EQUIPMENT CO.
343 Elizabeth Ave. Newark 8, N. J.
Bigelow 2-2323

FOR SALE

1—¾ yard Strayer portable concrete mixing plant.
1—102 ton three compartment Hetzel concrete aggregate bins complete with scales.
1—90 foot boom with goose neck for Osgood Victor type shovel.
1—4" Hart horizontal drill.
1—Rex No. 105 Mixer.
1—Jaeger one bag mixer.
3—Buday 12" electric power saws with roller extension tables.

All of this equipment is located in Western Pennsylvania.

Mountaineer Engineering Company
Box 391 Coraopolis, Pa.

2—Super "C" Tournapuls, w/L.P. Scrapers, Excellent
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30 ton 1943 PLYMOUTH

8 ton 1943 PLYMOUTH

8 ton 1943 BROOKVILLE

20 ton WHITCOMB

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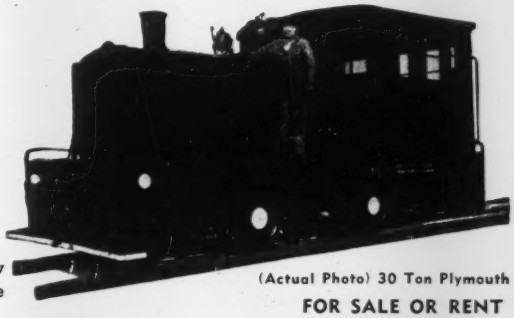

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One Gardner-Denver 365 c.f. Ser. #95410 Diesel Engine. Located Nedrow, N. Y.
One I-R 500 c.y. Ser. #40T9673 Heserman Oil Engine. Located Nedrow, N. Y.
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21″	112#, 132#	40/60′
24″	100#	30/60′
27″	94#	55′
30″	116#	35′
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Special Items

50 tons	15″—54.7#	beams	40′-48′
25 ″	20″—65.4#	″	40′-50′
25 ″	21″—62#	″	50′-60′
50 ″	24″—76#	″	50′-60′
25 ″	27″—94#	″	50′-60′
25 ″	30″—108#	″	50′ 0″

Ship Channels

6″—12#—15.3#—18#—15.1#—16.3#
8″—18.7#—22.8#
9″—25.4#
10″—21.9#—25.3#—41.1#
12″—32.9#—40#
13″—31.8#
18″—42.7#—45.8#—58#

Lengths 40′ to 60′

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READY TO OPERATE

PRICED TO SELL QUICK

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1—**BLAW KNOX FINISHING MACHINE** 20 To 25 Feet

1—**KOEHRING BULL FLOAT** 20 To 25 Feet

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WO 2-4946

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2 D-8's 8R & 1H series w/dozers
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1 D-4, 2T ser.es w/dozer
1 Caterpillar model #12 Grader
Truck Crane, Quickway mod. E
2 Diesel Rollers, Galion & Huber 10 ton
Machinery Trailer, 30 ton
3 International T-9 Swing Cranes
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2 TD-18's, 1 TD14 w/blades

Also other items.

All very clean, some new

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- Flame Resistant

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27E MODEL 2A BIG DRUM

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ADVERTISERS IN THIS ISSUE

Adams Mfg. Co., J. D. 43
Allied Steel Products Co. 63
Aluminum Co. of America 33
American Steel Dredge Co., Inc. 63

Bay City Shovels 56
Bethlehem Steel Co. 1
Blaw-Knox Div. Blaw-Knox Co. 67

Carey Mfg. Co., The Philip 28, 29
Cement Gun Co. 63
Chevrolet Motor Div., General Motors Corp. 6
Chrysler Corp., Industrial Engine Div. 30, 31

Dixie Cup Co. 57
Dravo Corp. 8
Dresser Industries, Inc. 25

Earle Gear & Machine Co., The 51
Economy Forms Corp. 44
Engineering News-Record 54, 55

Flexible Road Joint Machine Co. 66
Ford Motor Co. ..... 4th Cover

Gardner Denver Co. 126
Gemmer Mfg. Co. 34
General Electric Co. ..... 2nd Cover
Gunite Concrete & Construction Co. 69

Homelite Corp. 48
Hypressure Jenny Div. Homestead Valve Mfg. Co. 67

Kennedy Valve Mfg. Co. 39
Koppers Co. 50

Lehigh Portland Cement Co. 4

Mall Tool Co. 51
Marion Metal Products Co. 69
McCulloch Motors, Inc. 37
Mine Safety Appliances Co. 64

Peerless Pump Div. Food Machinery & Chemical Corp. 53
Permutit Co. 17
Post Co., The Frederick 3
Powder Power Tool Corp. 45

Raymond Concrete Pile Co. ..... 3rd Cover
Richmond Screw Anchor Co. Inc. 2

Sisalkraft Co., The 60
Sprague & Henwood, Inc. 69

Tanks & Buildings, Inc. 56
Timber Engineering Co. 60

Union Wire Rope Corp. 46, 47
U. S. Rubber Co. 59

Viber Co. 61

Wayer Impactor Sales Co. 38
Westinghouse Electric Co. 40, 41

Searchlight Section
(Classified Advertising) ..... pgs. 70, 79

ENGINEERING NEWS-RECORD

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$15.75 Ea
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List Price About $72.00

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SPECIFICATIONS—57" from front to rear axle. 29½" width between wheels, 9.7" overall height, 42" overall width. Weight 465 lbs. Complete with tires: Firestone 6.00 9-4 Ply. Timken-bearing wheels. Capacity: Approximately 4000 lbs.
$79.50 Ea 3 or More $75.00 Ea
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ROSE BROTHERS CO.
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TERMS Net 10 days to rated concerns. Others please send check with order. F.O.B. Cincinnati, unless otherwise specified. All items

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6—55,000 bbl.
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CONSTRUCTION BUSINESS

ENR Cost Indexes rise as June sees trend change

Construction costs end a seven month decline in June, as further wage increases more than offset scattered savings on lumber and cement.

ENGINEERING NEWS-RECORD's Construction Cost Index has climbed 1.68 points over May to 473.78, the Building Cost Index .36 points to 349.28 in the first such increases since October, 1948. By May, construction costs had eased 8.11 points from a 480.2 high, and building costs 8.15 points from a top 357, due almost entirely to breaks in lumber prices.

ENR's Materials Cost Component is down less in June than any month since September, 1948. This is a result of firmer June lumber prices. The 20-cities average price for 2x4 Douglas fir and yellow pine fell less than ¼ percent, which is well below the average 1¼ percent monthly drop over the past eleven months. The price average now is $79.57 per M Bd. ft. compared with $93.54 the peak for lumber prices in February, 1948.

Wage gains for both skilled and unskilled construction labor boosted the June ENR 20-cities averages one cent hourly. Skilled construction workers are averaging $2.39 hourly, and common $1.44. At this time last year, however, common wages gained five cents, and skilled (an average of three trades) seven cents.

Cement prices took their first postwar cut this month as six of 20 reporting cities saw price reductions that brought the average price down three cents to $2.96 per bbl. Steel "mill prices" included in the ENR indexes are unchanged, but there may be savings on delivered prices resulting from increased freight absorbtion by producers.

Backlog continues gains, commercial work leading

Construction's backlog increased $365 million in May, with the strongest gain in commercial buildings—the sharpest drop in industrial buildings.

A little less than half of this added construction reserve is private work, and almost one third is federal. Last year the net increase was only $28 million in the same month.

Commercial building: hospitals, housing, churches, stores and theaters, alone accounted for three-fourths of the boost in the private backlog, or $131 million. The industrial building backlog on the other hand, shrunk for the second month in a row—off $24 million, while in May of last year it gained $85 million.

Streets and roads saw the addition of $116 million to backlog in May, whereas a year ago there was a net decline of $20 million. Public building picked up $48 million in added reserves, earthwork and drainage $9 million, waterworks close to $6 million, private bridges $6 million, private unclassified $39 million, and public unclassified $61 million.

Net removals aside from industrial building include a $19 million volume of sewerage contracts, and $9 million in public bridges.

The backlog of jobs currently awaiting the "go ahead" signal now stands at: $1.2 billion for waterworks, $2.1 billion for sewerage, $1.5 billion for bridges, earthwork and drainage $7.4 billion, streets and roads $4.2 billion, buildings: public $9.9 billion, commercial $5.3 billion, industrial $4.4 billion, and unclassified construction $8.8 billion.

Survey shows school costs near $1,000 per student

Schools are going under contract this year at $11 per equare foot in a majority of cases, but the costs range as high as $21.79 and as low as $6.99 depending on facilities and location. This is revealed by preliminary findings of a recent ENGINEERING NEWS-RECORD unit cost survey.

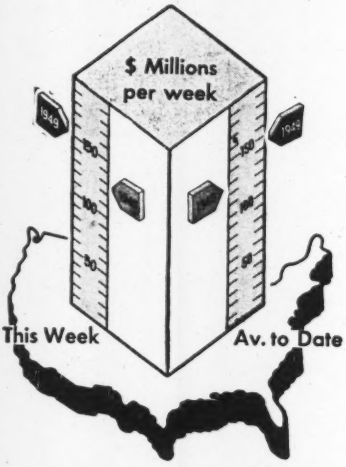
Cost per student varies between $345 and $1,639, with the average community spending between $900 and $1,000. In a few cases this rate is lower for the larger schools, but generally addition of extra facilities is necessary to accommodate the big student body.

Cube costs range from $.46 to $1.14 on the schools reported, but greatest concentration is between $.55 and $.65. The lowest figure comes from a Florida school, and the top from one in New York.

A combination auditorium-gymnasium, library and cafeteria are standard facilities according to the survey, with multiple usage a general practice. In one Massachusetts high school a combination library and cafeteria is also used as a study hall and home room. Typing room, "office practice room," laboratory lecture area, and student activities room also are utilized as home rooms, and auditorium and gymnasium are combined.

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	June '49	473.78	227.75
Building Cost	June '49	349.28	188.81
Volume	May '49	275	121



Activity This Week

As reported to ENR (in millions of dollars)

Amount of Contracts let

	Week of June 16 1949	Cumulative 1949 (24 wks.)	Cumulative 1948 (25 wks.)	% chge av.wk.
Federal	$17.4	$485.9	$511.6	−1
State & Mun.	62.0	1,346.8	1,133.4	+24
Total Public	$79.4	$1,832.7	$1,645.1	+16
Total Private	71.4	1,731.2	1,528.0	+18
U. S. Total	$150.8	$3,563.9	$3,173.1	+17

Contracts by type of work

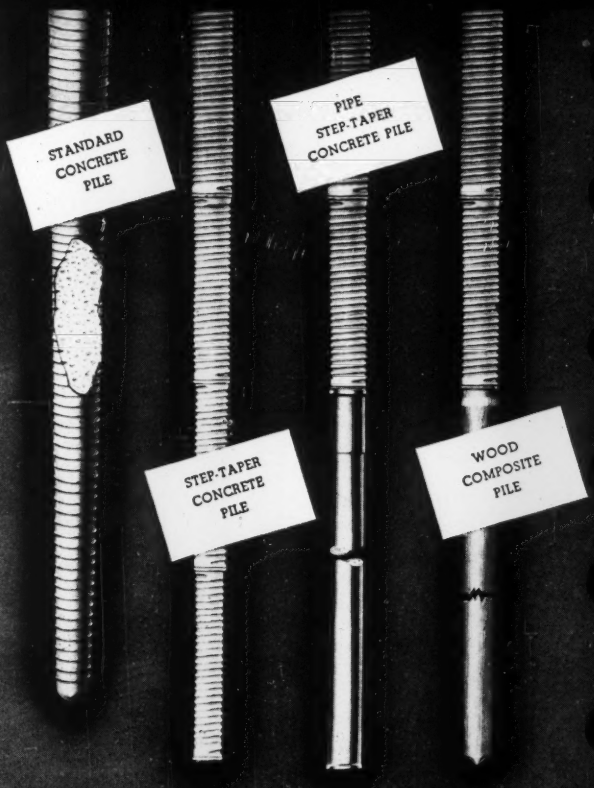
	This Week	Cumulative 1949 (24 wks.)	Cumulative 1948 (25 wks.)	% chge av.wk.
Waterworks	$1.4	$81.0	$96.4	−12
Sewerage	5.8	115.1	98.9	+21
Bridges	8.5	161.2	140.6	+19
Highways	24.5	361.6	463.1	−18
Earthwork, Waterways	10.7	281.9	262.7	+12
Buildings,				
Public	23.1	708.7	485.7	+52
Industrial	15.1	445.2	492.2	−6
Commercial	41.1	1,031.1	918.1	+24
Unclassified	20.6	315.1	215.4	+52

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

New capital for construction

	Cumulative 1949 (24 wks.)	Cumulative 1948 (25 wks.)	% chge av.wk.
NON-FEDERAL	$2,483.9	$1,763.0	+47
Corporate Securities	1,200.8	948.5	+32
State and Municipal	1,283.1	814.5	+64
Total Capital	$2,483.9	$1,763.0	+47

OUTSTANDING ADVANTAGES
OF
RAYMOND CONCRETE PILES



Raymond's successful experience for more than a half century has thoroughly proved these six outstanding advantages of Raymond Concrete Piles. These benefits, plus Raymond's expert personnel and specialized equipment, result in sound, dependable substructures that meet every requirement. You are invited to consult our engineers for the facts.

1 **PERMANENCY**

Every Raymond Concrete Pile is a permanent achievement, accomplished by a series of carefully planned steps which assure a safe substructure support.

2 **GREATER CARRYING CAPACITY**

The use of tapered equipment on many Raymond piles, giving to high carrying capacities, and the soil pressures developed during driving are fully understood.

3 **UNIFORM BEARING CAPACITY**

Regardless of variations in subsoil conditions, Raymond piles can be driven to any depth required to attain uniform bearing capacity for the whole foundation.

4 **ENGINEERED FOR THE JOB**

Raymond can provide the type of pile specifically adapted for your job.

5 **SAVING IN CONSTRUCTION COST**

Raymond's long experience on all kinds of jobs, the ready availability of equipment and the relatively shorter lengths of Raymond piles compared to some types, assure genuine economy in foundation cost.

6 **COMPLETE SATISFACTION**

By the satisfactory completion of over 14,000 contracts, involving more than 10 million feet of piling, Raymond has established a world-wide record of performance.

RAYMOND CONCRETE PILE CO.

Branch Offices in Principal Cities of United States and South America

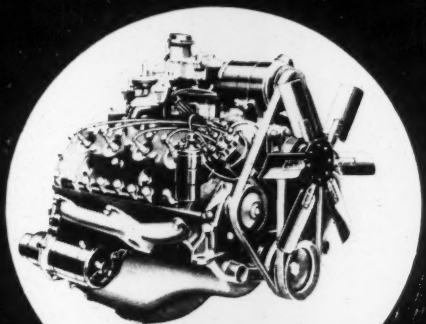
140 CEDAR STREET • NEW YORK 6, N. Y.

AROUND THE WORLD
52 YEARS FOUNDED 1897 OF PROGRESS

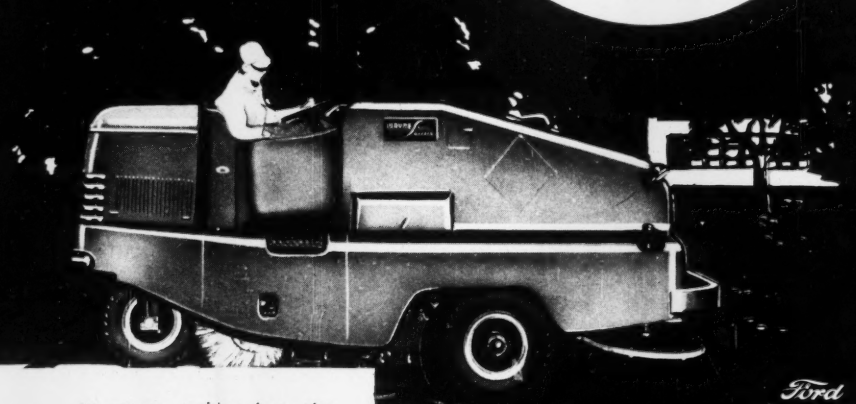
THE SCOPE OF RAYMOND'S ACTIVITIES

Includes every recognized type of pile foundation—concrete, composite, precast, steel, pipe and wood. Also caissons, underpinning, construction involving shore protection, shipbuilding facilities, harbor and river improvements and borings for soil investigation.

3



Ford 239 V-8 Industrial Engine
(239 cu. in. displacement)



On streets, parking lots, playgrounds—any paved surface—the Wayne Motor Sweeper gives a clean sweep at less cost per mile, handles easily in restricted quarters. Made by the Wayne Motor Sweeper Division of Brown-Bevis Co., Los Angeles, this equipment uses, for motive and sweeping power, the Ford 239 V-8 Industrial Engine—a prime factor in the economical operation, reliable performance and simplified maintenance of the unit.

Ford
INDUSTRIAL ENGINES